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AND

Annals of Comparative Pathology.

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FIBROUS ANKYLOSIS.

BY VETERINARY-CAPTAIN J. A. NUNN, D.S.O., F.R.C.V.S., PRINCIPAL, LAHORE VETERINARY COLLEGE; AND VETERINARY-LIEUTENANT BLENKINSOP, A.V.D., VETERINARY-SURGEON TO THE PUNJAB GOVERNMENT.

IT is very common, in equine patients, to find that certain joints have, more or less, lost their power of flexion, owing to inflammatory processes of various kinds in and around them, the exciting causes being injuries or overwork. This stiffness or loss of flexion is most commonly seen in the front fetlock joints, but the writers of this article have seen cases in which the pastern, knee, and hind fetlock joints have been affected. In cases where this loss of flexion is due to an inflammatory exudate having been thrown out and become organized, good results have been obtained from placing the patient under chloroform, and breaking down these adhesions by forcible extension and flexion of the affected joint. This process is the same as that carried out from time immemorial under the name of "bone-setting," and was formerly chiefly confined to empirics. These men were often very expert in the manipulation of such joints, both in human beings and animals; and amongst laymen they had a great reputation, and received a considerable amount of credit for what was supposed to be their superior anatomical knowledge; whereas their views, so far as fractures and dislocations were concerned, were often perfectly erroneous. The subject has been taken up and carefully studied during the last few years by human surgeons, and it was from information published from time to time that we were first induced to try this line

of treatment in veterinary practice. In the *British Medical Journal* for 26th May, 1888, a valuable paper, read by Mr. W. J. Penney, F.R.C.S., before the Somerset Branch of the British Medical Association, is published, and from this paper a great deal of what is now written has been drawn. Mr. Penney states: "Among affections successfully treated in this way are cases of fibrous adhesions within and around the joints, ligaments and synovial membranes; cases of true, complete dislocation; cases of partial dislocation or sub-luxation; cases of adhesions of tendons to each other, or to ligaments or other structures; disarrangement of ligaments; displacement of tendons; cases of muscular spasm; ganglia which have been ruptured. In some cases bodies foreign to the part, such as new growths, detached pieces of cartilage, displaced cartilages, thickened synovial fringes, organised blood-clot, and numerous others, have become nipped between the bones forming a joint, and have thus interfered with its function." Now, veterinary surgeons will at once notice how frequently cases of lameness in horses are attributable to one or several of these causes, and they will be able to call to mind numerous cases which have, for hardly any noticeable cause, been lame for lengthy periods. We have ourselves had several cases which have been under treatment for months, and which had been blistered over and over again, and, in some instances, fired, brought to us as being incurably lame; and these cases, after the affected part had been manipulated once or twice under chloroform, have been able to trot fairly sound, and perform useful work.

The chief structures in which lesions occur, causing loss of power of flexion, are the capsular and synovial ligaments; and in the term capsular ligament, as here used, are included the lateral ligaments with the anterior and posterior ligaments of the same joint. The tendons are less frequently implicated, but in the fetlock joint the branches of the superior sesamoidal ligament are very commonly included in the tissues which have become matted together. The majority of adhesions of this sort take place after strains, and are less frequently the result of sub-luxations.

Lameness is chiefly caused by the capsule becoming pinched between the bones forming the joint, owing to its becoming sticky and thickened from the fibrinous effusion on it, and consequently not being able to be drawn out of the way, or to fold in a natural manner, so as not to interfere with the movements of the joint. As long as the joint is worked, possibly the pain on movement will be shown, and it is only after the

adhesions have been broken down that the joint can be extended and flexed with immunity from pain.

With regard to the selection of cases suitable for manipulation, the following are the chief symptoms to be noted:—Total absence of any acute inflammatory symptoms, shown by the absence of heat in the joint; loss of power of flexion of the joint, which can be ascertained by lifting the joint and comparing the extent it can be flexed with that of the corresponding healthy one. In making this comparison, care should be taken that the force be applied to the toe of the foot, and that exactly the same amount be applied to both limbs. To gauge the amount of force necessary to produce corresponding flexion in both limbs, an ordinary spring balance, such as is used by butchers, can be employed, the hook being fixed between the toe of the shoe and the sole. This flexion sets up muscular spasms of a varying degree, that in the fore limbs, when the knee or fetlock joints are affected, are chiefly located in the muscles of the fore-arm and elbows. On gentle main pulsation, the movement of the joint should be perfectly smooth, and there should be but little thickening round it. If there is much thickening, it is advisable to reduce it as much as possible by gentle friction with some absorbent agent, and exercise, and the following ointment has been found very useful for the purpose:—

R. Unguent. Hydrarg. Fort., 1 dram.
Vaseline, 1 oz.—1½ oz.
(Misce.)

Having decided to manipulate the joint, the patient should be cast and placed completely under the influence of chloroform. It is most important that perfect anesthesia is produced in the larger animals, for if this is not done, the muscular spasm is so powerful that when any attempt is made to flex the joint, either it cannot be overcome, or else, if it is, such force has to be applied that there is great risk of a worse injury than that already existing taking place. The limb should be removed from the hobbles and the joint extended and flexed several times. The amount of force necessary varies with the extent and age of the adhesions; but force should not be spared until the joint has been fully flexed and extended. It is also important that a steady and increasing pressure be used, not sudden jerks. The adhesions usually give way with a sharp snap or crack, and from this it was thought that the bone-setters reduced dislocations. In the case of a stiff knee or fetlock joint, a piece of webbing should be passed round the foot, in order to obtain

sufficient power to extend and flex the joint. The following method of fastening on this webbing is what is recommended:—A piece of webbing or cotton belting about one inch wide and ten feet long is required. In the centre of this a clove hitch is made, Fig. 1 A. The free ends of this webbing are twisted round each other twice, as in Fig. 1 B, and are then carried forward *over* the hind and *under* the fore part of the clove hitch, as in Fig. 2 A A and BB, then backwards and *over* the fore part of the clove hitch, as in Fig. 2 D D, and again *forward* and *under*, as in Fig. 2 E E, so as to lap once round the fore part of it. The web is now adjusted round the foot as follows:—The clove hitch is placed round the foot with the twists formed at B Fig. 1, at the heel, as in Fig. 3 B. The ends of the webbing between A A and B B Fig. 2, are

Fig 1

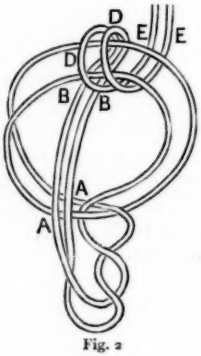

Fig. 2

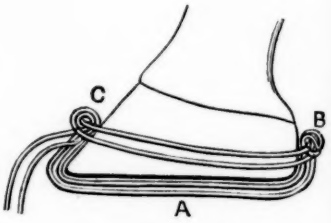

Fig. 3

underneath the foot, and extend from the cleft of the frog to the toe as in Fig. 3 A. The ends E E Fig 2 are in front of the toe, Fig. 3 C, and by pulling on the loose ends the whole of the webbing is tightened, and it will be found that great force can be exerted on the fetlock-joint without the webbing slipping off.

The after-treatment consists of dry massage, with flexion and extension of the joint for half-an-hour to an hour morning and evening. And if this treatment is properly carried out, it will be found that there is little or no effusion resulting from the violent manipulation the joint has received. In some cases it is necessary to flex the joint more than once before its natural extent of movement returns, and till this result is obtained the treatment should be persevered with, the horse

being cast every seven or eight days, and the joint manipulated under chloroform. Six cases have been treated by this method at the Lahore Veterinary College during the past winter session, all of them with good results. We would suggest that this method of extension might be tried in the numerous cases of thickened and stiffened joints in hunters that are seen at the end of the hunting season, before the usual remedy of the actual cautery is applied. Of course, if counter-extension fails, the cautery can be used afterwards; but it appears worthy of a trial, if only to avoid the blemish caused by firing.

GLANDERS IN A FOAL.

BY J. WILSON BARKER, M.R.C.V.S., ASSISTANT, PATHO-BIOLOGICAL LABORATORY, LINCOLN, NEBRASKA, U.S.A.

THE following case of glanders in a filly foal, born April 22nd, showing farcy buds April 30th, and dying of acute glanders on May 2nd, may be interesting to the readers of the VETERINARY JOURNAL. I cannot find a case of the kind on record in any of the volumes of that valuable journal, though I have looked them carefully through. The nearest approach to a case of this kind is recorded in *Hertwig's Magazine*, vol. viii., p. 468 (1842), but this was in a four-weeks-old foal.

I think, perhaps, it will be well to give a short history of the mare before proceeding with the foal. She is a trotting mare, about fifteen hands high, nine or ten years old, has been in her present owner's hands three years, and is said to have shown no signs of illness of any kind; travelled well, had no cough, and was in good condition. On a closer examination, the inter-maxillary glands were atrophied, hard, knotty, and attached to the skin. The visible portion of the nasal mucous membrane was pale and anæmic. On examining the posterior part of the membrane with a reflector, it was noticed to be of a leaden colour, and on the off side could be seen an apparently healed ulcer. This was her first foal.

The first eight days after birth the foal appeared to be in perfect health. On the ninth day, while patting the foal, her owner noticed some lumps upon her back and upper parts of her hind legs. On the tenth day, May 1st, the foal being worse, a veterinarian of this city was called upon for medicine and advice. On the eleventh day the foal was much worse,

and was attended by the veterinary surgeon who had prescribed for it. Having heard of the case, Dr. F. S. Billings and myself drove out to see the foal. It was in poor condition, breathing with great difficulty; inter-maxillary glands swollen, a thick, dirty, yellowish, sticky discharge from both nostrils, and distinct ulceration of the nasal mucous membrane in both nostrils. The buds had broken and were discharging a slight quantity of thick material. The case having been diagnosed as glanders by the veterinarian, we confirmed that opinion, and informed the owner we did not think the foal could live long, and asked him if he would bring it to the laboratory, when dead, for examination. On May 3rd, about eight a.m., the owner brought the foal in, it having died on the way in.

Necropsy.—The body was much emaciated. The external lymphatic glands were swollen and œdematous. The inter-maxillary glands contained a yellowish white pus. The spleen was swollen and full of blood: liver swollen, and cut surface pale and dry. Kidneys excessively swollen, capsule non-adherent, cortex anæmic, medullary substance diffused.

Respiratory Tract.—The mucous membrane in both nostrils was pale and anæmic, and covered in many places with round and irregular-shaped ulcers. On the right vocal cord was a deep-seated ulcer, with swollen edges. There was also a small ulcer upon the epiglottis. About two inches down the trachea from the larynx was an extensive ulceration, embracing nearly the whole circumference of the trachea, and with an average width of half-an-inch. It is almost impossible to describe the lungs, so full were they of nodules in all stages of development. They could be both seen and felt, as hard lumps extending above the general surface of the lungs. These nodules varied in size from a small shot to immense centres of consolidation, the larger being very irregular in shape; they all presented greyish centres and rings of hyperæmic tissues around them. Some occupied entire lobules, sharply defined by a hyperæmic ring: in some cases several of the lobuli were involved. Nearly the whole of the anterior third of the inferior lobe of the right lung was one mass of consolidation; the pleura over this was swollen and filled with a yellowish, gelatinous material. The cut tissue was dry, and presented various stages of consolidation; the interlobular tissue was much thickened in many places, and of a whitish-grey colour. The mucosa of the bronchial tubes was swollen, and, in the deeper portions of the lung, reddish in colour, and filled with a reddish watery secretion.

The heart was pale in colour, and the walls of the right ventricle were contracted to an extraordinary degree, and contained very little blood; the auricle on this side was much distended. The walls of this ventricle were about three times the natural thickness. Cultures were made in beef boullion, glycerin, agar-agar, gelatin, and beef blood-serum, with blood from the heart, lungs, and spleen. These cultivations I will not describe, as they correspond to the usual descriptions. Cover-glass preparations from the blood, and pus from the inter-maxillary gland, stained with fuchsin and methylene blue, clearly showed the thick, round-ended, clotted bodies—the glanders bacilli.

A male guinea-pig was inoculated in the abdomen with one quarter c.c. of the pus from the inter-maxillary gland two hours after the arrival of the foal. A guinea-pig was selected for inoculation on account of the peculiar swelling of the testicles which invariably takes place. This peculiar swelling of the testicles occurs much more rapidly when the guinea-pig is inoculated in the abdomen. The second day after the inoculation the testicles began to swell, and continued to do so until it died on May 17th, the testicles at that time being the size of a large English walnut. The surface of the scrotum was of a reddish-brown colour, and from one spot a small quantity of yellowish pus was exuding. On removing the skin, between the right scapula and thoracic wall, quite a large abscess was found, containing a thick, yellowish pus; the tissues round the scrotum were congested and swollen. The testicles were closely adherent to the enclosing membrane, and were the seat of numerous extensive abscesses, filled with a greyish pus.

The guinea-pig having been in the hands of an artist—to take drawings from—for several hours, and not having been on ice, changes in the organs had taken place, so no further examinations were made. It may be well to mention, however, that no nodules could be found in the lungs or other organs.

THE TREATMENT OF ACTINOMYCOSIS.

THE treatment of Actinomycosis has hitherto not been very successful, either in man or animals, and any means which may be devised for dealing with it, and especially when the lesions are not immediately accessible to manual interference, must be heartily welcomed. As is well known, the malady is

of a somewhat multiform character, the diversity being due to the location of the ray fungus, though the changes this produces are essentially the same wherever this localisation may be. There is the production of a nodule—such nodules in myriads constituting the special feature of the actinomycotic tumours—each nodule is, according to Nocard, an exact reproduction of a Koster's follicle; that is, the central portion is, more or less caseous, with multinucleated giant-cells and voluminous epitheloid cells; this is enclosed in a layer or capsule of fusiform cells arranged in a concentric manner, their periphery becoming gradually fused into the proper tissue of the tumour. In the nodule we find the specific agent in the form of tufts of actinomyces, with here and there small clusters in the centre of the giant-cells.

These tumours, due to the irritation set up by the actinomycetes, may form anywhere in the body, but they are usually met with in the region of the head, constituting the so-called osteosarcoma, osteoporosis, or spina ventosa of the bones of the face and jaws, the schirrus of the tongue, and the pharyngeal polypi and wens of the neck. Though the digestive tract is the usual seat of the fungus, yet it frequently affects the respiratory tract, and it has been found in the liver and kidneys.

Hitherto, treatment has been limited to surgical measures and topical applications, the most successful of which, perhaps, has been tincture of iodine; and, of course, these could only be resorted to when the diseased part was conveniently situated. Quite recently, however, as announced at a meeting of the Paris Central Veterinary Society, by Professor Nocard, the internal administration of iodide of potassium has been brought forward as an excellent remedy; indeed, Professor Thomassen, of the Utrecht Veterinary School, pronounced it a specific in itself, though the local application of tincture of iodine may be combined with it. At the present time, however, he relies upon the internal exhibition of the iodide of potassium alone, and, according to his report to Nocard, he has been wonderfully successful in curing actinomycotic glossitis—the form of Actinomycosis most prevalent in Holland. He gives the drug in daily doses of six grammes (about $3\frac{1}{2}$ drams) in a pint of water, until the case begins to show signs of improvement, which happens usually in about eight days, when the dose is reduced to four or, at most, five grammes (about 2 to $2\frac{1}{2}$ drams). The animals withstand this treatment very well—apart from the ordinary accidents due to iodism, which are not serious—and they soon begin to improve, even

when very ill at the commencement of the treatment, and unable to eat. In less than eight days they can masticate hay, and they are rarely more than a month in hospital, which they leave completely cured. In cases in which the lesion is limited to the tongue and the adjacent soft parts, recovery has sometimes been effected on an average of fifteen days. Relying on the results of the treatment of more than eighty cases, he does not hesitate to affirm that the iodide of potassium is always successful.

Nocard adds the testimony of a French veterinary practitioner—M. Godbille, of Wigneheis—who has succeeded in curing four cases, giving larger doses of the drug, however; the cures were made in eighteen, ten, twelve, and fifteen days. Nocard himself relates a case of advanced lingual Actinomycosis which recovered in ten days. The dose of the medicine was six grammes in a pint of water the first day, increased to eight grammes (administered in two doses—morning and evening—with the food) on the following days. Iodism was well marked, but the drug was continued up to the ninth day.

It is to be hoped that Veterinary Surgeons in this country, who may have to deal with cases of Actinomycosis, will try this treatment, and inform us of the results.

Editorial.

RABIES IN FRANCE.

Of all the Continental countries, France appears to be most infested with rabid dogs, and this appears to have been nearly always the case. And yet, in no other country, perhaps, has the malady been better and more successfully studied from a clinical point of view; while the measures necessary for the suppression of the scourge have been pointed out and their adoption insisted upon by the distinguished Veterinarians who have adorned this branch of medicine now for so many years. Therefore, if France is exceptionally plagued by Rabies, it is certainly not the fault of the Veterinary profession in that country, but rather the lax administration of the law, or even disregard of it, which exists for the extirpation of the disease. The system of local government prevailing in France is not favourable to the control of contagious maladies among animals, and is no more likely to be effective in this direction than it was in our

own country before Government took this matter in hand; and unless the same course is adopted there as we were compelled to adopt here, these diseases will never cease to harass and vex our neighbours.

In Paris, Rabies has, it appears, been greatly on the increase lately, for while in January there were 85 cases reported, in March there were 126, April 131, and May 130; whereas in 1891, there was an average of about 80 cases per month. So alarmingly frequent are the recorded cases, that the Government Minister to whose care the public health is confided, has taken the management of the disease seriously in hand, and instituted a system of repression, which, if rigorously carried out, will undoubtedly soon get rid of it. But, as in this country, there are silly sentimentalists who protest against the most necessary measures, as they cause some inconvenience to their canine pets, whose comfort is of far more moment than human life and suffering; and, as also in England, there are Veterinary Surgeons there who support the insane notions of these stupid and reckless people. It is to be earnestly hoped that the Minister will remain firm, and receive the full support of the French Government, and all sensible people; as for the sentimental lunatics, facts have no value for them, else they would see what a boon these measures have conferred on the human populations in other countries, as well as on the canine race. Folk who oppose measures for the suppression of rabies are the enemies, not only of their own species, but also of their beloved friends and companions—the dogs, as well as other creatures susceptible of rabic infection.

Until France succeeds in stamping out Rabies, other countries, as well as our own, are always in peril of its importation, for dogs are much more difficult to deal with in the matter of exclusion than the larger domesticated animals. It is to be sincerely hoped, therefore, that she may adopt general measures of such a kind as will free her from such a menacing and alarming disorder as Rabies.

THE SHOEING OF ARMY HORSES, ANCIENT AND MODERN.*

BY GEORGE FLEMING, C.B.

THE horse is valuable to man because of its strength, speed, and endurance, to say nothing of its intelligence and docility. But these qualities would be of little importance were its hoofs not protected by some contrivance that would shield them from the effects of prolonged travelling, especially on hard ground. No other creature has so powerfully assisted in the progress of

* From the *United Service Magazine* for June, 1892.

civilisation, and it has been able do so because at least two thousand years ago it was discovered that the hoofs could be rendered proof against injury by the simple expedient of attaching a narrow rim of metal to their ground margin by means of a few nails. Until this armature was adopted the horse was of little value, as a few days' travel with a load on its back, and particularly during wet weather in stony countries, would soon render it foot-sore—a condition which would require a considerable time to recover from. So that until this protective shield for the hoofs was introduced the horse was comparatively disregarded, and held a far inferior position in the estimation of mankind to that which it afterwards did. Some of the nations of antiquity preferred the mule or ass, from the superior endurance of their hoofs, while others utilised the camel—in every case the animal being selected for its physical adaptation to the soil and climate, and the particular kind of labour demanded.

Thus, previous to the discovery of horseshoes to guard its feet from injury, the horse must have been almost useless, if not an encumbrance, in rocky, mountainous countries. This reason, in all probability, induced Moses to forbid the use of the horse among the people of Judea, and may account for its not being mentioned in the Decalogue, though the ox and ass are. Amos (vi. 12) speaks of it as a thing as impracticable to make horses run upon a hard rock, as to plough up the same rock with oxen. "Shall horses run upon the rock?" Something similar may be gleaned from a passage in Judges (v. 22):—"Then were the horses' hoofs broken by means of the prancings, the prancings of the mighty ones." And ancient history otherwise makes frequent mention of damage done to horses' feet, through their being too much worn by travelling. One marked instance is given by Polybius, who informs us that the horses of Hannibal's army suffered much from the loss of their hoofs in Etruria.

It is curious and instructive even now to observe, wherever the horse is employed with unshod feet, the diminished sphere of its usefulness. On the great alluvial plains or pampas of South America, where horses cost less than shoes for their feet do, they are consequently ridden without them and generally suffer but little. But if any travelling has to be done in the Andes, they quickly become tender-footed, and soon are unable to walk. It is the same in South Africa, where horses can be used to a considerable extent on soft ground without shoes; though the Boers would prefer having them shod if they had the opportunity. For instance, Veterinary Lieutenant-Colonel Duck, who has had a very extensive experience in South Africa, states:—"For Army horses it is always advisable to have them shod on the hind as well as on the fore feet. In the Sekukuni War we found this to be absolutely necessary. The colonial horses never in their lives had shoes on their hind feet. Many of them, twelve or fourteen years old, would come back from a long patrol over hard ground as tender in their feet as possible. The hind feet presented the appearance of having being rasped, almost ground away, and blood coming through in spots, both at the frog and at the toe." On the alluvial plains of India horses can also perform a certain amount of travelling with unshod hoofs, but shoeing is always had recourse to when the work is at all hard. Cavalry horses must be shod on the fore-feet at least, and artillery draught horses on the hind ones.

In pre-shoeing times cavalry must have been of very limited use, and it is highly probable that a large proportion of spare horses accompanied that arm to take the place of those that were disabled by being hoof-worn. This is what travellers have to do at the present day when travelling in Mongolia. Therefore the greatest attention was paid to the hoofs, both in selecting and managing horses, dense tough horn being a most important *desideratum;* and the care of the horsemen was to maintain them in that condition. Convincing

proof of this is given by Xenophon in his "Hipparchicus." There is also evidence that temporary contrivances were in use at a latter period to prevent undue wear of the hoofs, or to enable the crippled horses to get along when the damage had been done. These are described in the early Roman treatises as the *solea ferrea* and *solea spartea*, and other names. In 1860 the Japanese knew nothing of our method of shoeing, and employed similar contrivances in the form of sandals made of rice straw; and if a long journey were to be undertaken, a proportionate bundle of these was tied to the saddle, to be attached to the feet when the hoofs became much worn. Captain S. Osborne saw these sandals made of silk and cotton. In Iceland, horses are occasionally shod by the peasants with sheeps' horns. In the valley of the Upper Oxus, towards Badakshan, according to Burns, the horses are shod with the antlers of the mountain deer, the shoes being fastened on with horn pins; and Wood says that the Kirghiz also shoe the fore-feet of their ponies with horns of the mountain flocks. In the Soudan, when iron shoes cannot be procured, socks of camel-skin are employed. In all these countries hard, dense hoofs are essential, and everything is done to render them so, as in the time of Xenophon. Among the Afghan tribes, for instance, not satisfied with the natural qualities of the hoof-horn, even when best developed, the native shoers adopt the following means for increasing its resisting power. After removing the old shoe and cutting away enough of the superfluous horn, the lower margin of the wall and the sole are pretty freely charred by a red-hot iron and while they are yet in a state of partial fusion the entire foot is dipped into a strong solution of alum. Hoofs as hard as flint formed one of the attributes of a useful horse; and Isaiah, in the grand prophetic language in which he foreshadows the downfall of Jerusalem, speaks of those "whose arrows are sharp and all their bows bent, *their horses' hoofs shall be counted like flint*, and their wheels like a whirlwind."

It is probable that the present method of protecting horses' hoofs was employed long before our era, and was not known to, or at any rate not much in vogue with the Romans until later. It was also probably introduced by the barbarian invaders, and there is reason to think that the Celts were the first to resort to it in Europe. At any rate, bronze and iron shoes and nails as well as shoers' tools, are found in the multitudinous graves of the Celtic Gauls in the vicinity of Alesia, where the fate of Gaul was decided by the capture of that immense fortress by Cæsar, which perhaps constitutes his greatest military achievement. Elsewhere they have been found in France with Gaulish relics, as well as with Roman remains, and in the early centuries of our era we find allusions to shoeing by various Roman writers. Haydn's "Dictionary of Dates" asserts that shoeing was introduced into England by William the Conqueror; but such was not the case, as some excellent and characteristic examples of the Celtic or Gaulish horseshoes and nails have been found in various parts of this country, some of them with Roman articles; while the laws of Howel the Good of Wales, enacted centuries before the arrival of the Normans, as well as other documentary evidence, testify that shoeing was regularly practised, and that the Court smith enjoyed notable privileges. But at the time of William the Conqueror, and for some centuries afterwards, when heavy armour for man and horse was worn, and the steeds had to be nearly as massive as the van-horses of the present day, in order to be able to carry the immense loads placed on their back, the shoer's art was held in high esteem, as it was of great importance. William brought with him a nobleman, Henry de Ferrers, who received the surname because he was entrusted with the shoeing of the King's horses; and the present Ferrers family still bears six horseshoes on their coat of arms.

The designation of "mareschal" (origin of the title of marshal) was in

everyday use at this time, and a price was fixed by regulation for shoeing. Shoes appear on seals, and on the arms of towns—as Northampton and Gloucester—and nobles had their mareschals, as they had their squires and other followers. What has been termed the age of chivalry would never have occurred had shoeing not been practised, and so essential was it considered, that knights and squires, and even princes and kings, did not disdain to learn the art. Shakespeare makes allusion to this in one of his plays, where one of his characters, speaking of another, says:—"He doth nothing but talk of his horse; and makes it a great appropriation to his own good parts that he can shoe him himself." The squire of the poor knight who could not afford to keep up a full retinue was obliged to perform the duties of several, and shoeing was one of these.

For some considerable time the draught horse *(equus ad tractandum* or *carrectarum)* was a somewhat rare animal, the state of the roads in this country seldom allowing the passage of wheeled carriages. The Court travelled on horseback, the ladies even being compelled to resort to this mode of conveyance. The *equus dextrarius*, or war-horse, was in high favour, and kept only for state occasions or for battle; while the *discopertus*, or "hobelar," was used for quick travelling. The light cavalry soldiers who rode these small horses or "hobbies," were also called "hobelars." All were regularly shod, and it would appear that the shoes and nails could be purchased at a certain but fluctuating price. For the war-horse, the shoes were heavy and clumsy, with great heel projections to afford a grip on the ground; but those of the hobelars were light. The nails had very large projecting heads for large and small shoes, in order to ensure a good foothold. This is also a characteristic of the earliest nails discovered.

In the curious and valuable chronicles of Froissart we find many interesting references to shoeing. Describing the first attempted invasion of Scotland by Edward II., he gives us an instance of the importance of the art at that time, and the inconvenience that arises when circumstances prevent its being attended to. When the army of that King had advanced as far as Newcastle-on-Tyne, the cavalry were in a miserable plight, and evidently ineffective. "It never seased to rayne all the hoole weeke, whereby theyre saddels, pannels, and counter-syngles were all rottyn and broke, and most part of their horses hurt on their backs; nor they had not wherewith to shoo them that were unshodde."

When the troops reached Durham, however, they were obliged to rest there for two days, "and the oste rounde about, for they coulde not all lodge within the cite, and theyre horses were newe shoode, and set out on theyre march to York."

In these chronicles—which embrace the latter part of the reign of Edward II., and terminate with the coronation of Henry IV.—there is repeated mention of shoeing, and particularly in dealing with the wars which England was then waging on the Continent. In the great army Edward III. carried into France in 1359—the greatest, according to Froissart, that had ever left England—we find a completeness in equipment and material which is somewhat astonishing, when we hear of the present condition of our Army, and consider its fitness for a Continental war, particularly in the matter of land transport. Our warrior king appears to have omitted nothing that could render failure impossible. On arriving at Calais he "took the field with the largest army and best-appointed train of baggage wagons that had ever quitted England. It was said that there were upwards of 6,000 carts and wagons, which had all been brought with him." Describing the order of march, Froissart goes on to state that "in the rear of the King's battalion was the immense baggage-train, which occupied two leagues in length; it consisted of upwards of 5,000 carriages, with a sufficiency of horses to carry the provisions for the army, and those

utensils *never before accustomed to be carried after an army*—such as hand-mills to grind their corn, ovens to bake their bread, and a variety of other necessary articles . . . . There were also in this army of the King of England 500 pioneers with spades and pickaxes, to level the roads and cut down trees and hedges for the more easy passage of the carriages . . . . I must inform you that the King of England and his rich lords were followed by carts laden with tents, pavilions, mills, and forges, to grind their corn and *make shoes for their horses*, and everything of that sort that might be wanting." This appears to have been the first occasion on which field-forges for shoeing horses accompanied an English army in war. No doubt an ample number of shoers was provided. By a statute of this monarch, dated in 1350, it would appear that the shoer was yet designated in Norman-French, still fashionable in legal and Court language, the *ferrour des chivaux*, and was, with a number of other craftsmen—such as saddlers, spur-makers, armourers, etc.—regularly sworn in before the justices to do and use his craft in a proper manner, and to confine himself to it.

Through all the subsequent wars the shoeing of army horses demanded attention, and the field-forges were accompaniments of every expedition. The art itself was practised in the Army as in civil life; but it descended to a low level, and there were no longer kings and princes, knights and squires, to patronise it; so that its practice was entrusted to men who generally knew little of the principles which should control it, and were, for the most part, mere rule-of-thumb artisans. After the battle of Waterloo, and during the long peace terminating in 1854, we do not hear much of army shoeing; but the many intelligent veterinary officers who served in the interval, and had the superintendence of this section of horse management, prevented the introduction of the malpractices—founded on erroneous notions of the functions of the horse's foot—which had in former times inflicted so much damage.

The farriery organisation during the Crimean war was not much tested, as after the army arrived at Sebastopol there was no marching for mounted troops. Balaclava and its vicinity during the siege was for them nothing more than a fixed camp. Each troop of cavalry had a farrier-sergeant, a shoeing-smith, and an assistant; but though the regiments had their full complement on leaving this country, the shoers were soon expended, and as there were no reserves of them in regiments or elsewhere, there was the greatest difficulty in keeping the horses even partially shod. As for the auxiliary mounted corps raised during the war, such as the Land Transport Corps, the scum of the London forges was sent out, along with supplies of iron, coal, and nail rod, to make shoes and nails!

What would have happened had it been necessary to make long marches on hard roads or stony country, it is not difficult to guess; but, fortunately, the test was not applied. A very large quantity of shoes and nails were supplied by different contractors in England; but these were such rubbish, both in material and manufacture, that few were used, and, after the war, they were, I was told, sold for the price of old iron.

Though the shoeing in those days was better in some regiments than others, yet it was not very good on the whole, notwithstanding that the shoers were long-service men. The arrangements for providing the shoeing of mounted corps were highly objectionable. The Government contracted with the shoers to provide all the material, for shoeing at a fixed sum—at first a penny a day per horse, then three farthings, and finally a half-penny. For this sum the farrier-sergeant had to provide iron, coal, nails, and shoeing tools, the Government finding the shoe-making implements. This system led to great abuses, as might have been anticipated; it certainly was not advantageous to the Army, however much it may have been so to the artisans, and formed an

exception to that prevailing in every other branch of handicraft. However, during peace and long service matters went on after a fashion, though there was always dissatisfaction among the shoers of the heavy horses, who received no more money than those who shod light horses.

It was thought that this contract system would prove more economical than the one formerly existing, in which the shoeing materials were provided by the Government; but though waste was got rid of, and some small economy may have been effected, yet, as I have said, it was rather a one-sided bargain, and not to the advantage of the mounted troops.

The shoeing arrangements were otherwise very defective, and not at all adapted to war requirements. With much difficulty men were obtained from troops for instruction in the forge, and when there, the instruction was greatly protracted, owing to their having to attend drills and field-days, and in some regiments stable and other duties. The course of instruction embraced, not only taking off shoes, preparing the hoofs, and applying the new shoes, but also making shoes and nails; so that generally a period of about three years was required to make a fairly intelligent man a good shoer; some men needed a longer time, and some, again, were never anything but indifferent artificers. The shoe and nail-making occupied by far the largest portion of this teaching, and was a constant cause of trouble. It needs much skill and practice to forge a good shoe, and exceptional ability to make safe and reliable nails. In only too many regiments this instruction received little consideration, and the veterinary officers had to contend with serious obstacles in keeping the horses fit for duty in the matter of shoeing. Sometimes the men under instruction were constantly changed, or allowed in the forge only now and again, and for brief periods. The sergeant-farriers and shoeing-smiths also sometimes saw an advantage in keeping these men back, and having no spare shoers in the regiment, as then, in case of misbehaviour, they themselves could not be dismissed the forge, there being none to take their place.

The shoe and nail making was certainly the greatest drawback to the system, because of the skill and time required to shoe the horse. To make the shoes and nails for a horse, and to put them on, required about two or three hours, and if the animal was a large one—as in transport or artillery—the labour was somewhat heavy. So that to keep forty horses new shod once a month required two or three men. This was during the long service system.

The introduction of short service rendered shoeing a very serious matter, as three years could not be afforded for instruction, nor yet one-third of that time—there being scarcely opportunity to train men as soldiers, much less artisans also—before they were eligible for the Reserves. The shoeing in some regiments was in a lamentable condition, especially in those recently returned from India. Nail-making, the most difficult part of shoeing perhaps, had to be given up—a few being made, or attempted to be made, in some regiments just for practice, those for attaching the shoes being purchased; while, as a rule, the shoes made were of a very sorry description and the reverse of uniform in shape or make. In the majority of regiments there was not a spare shoer, and in very few were there men under instruction.

The expedition to Egypt in 1882, brought this unfortunate state of affairs markedly to notice, especially in the case of one cavalry regiment, which embarked with its full complement of shoers, but no extra ones. On reaching Cairo the number of these had become so reduced that the horses could not be shod; no shoers could be spared from the other corps, so that shoers were telegraphed for from England, but regiments were nearly as badly off at home.

This unsatisfactory state of the Army shoeing demanded immediate attention, as it was rendered evident that our mounted corps were scarcely fit to enter on a campaign of such a trifling character as that in Egypt in 1882, where there was scarcely any marching.

The defects of the system had long been apparent to those who were responsible for the shoeing of Army horses; but the advent of short service accentuated these defects a thousand-fold, and while during peace it was scarcely possible to march troop horses from one station to another, in a campaign of a few days' duration the system broke down altogether.

Fortunately, for some years mechanical ingenuity in the United States had been at work devising machinery for the manufacture of horseshoes and nails, and it had succeeded in producing these of such excellent shape and quality that those made even by the best workmen in America could not compete with them; while they could be furnished ready for immediate use in any quantity and at a lower price than hand-made ones. They were in universal demand throughout the States, and the quantity turned out by the manufacturers there was immense. On their being introduced and tested in this country, it was at once perceived by those who had studied the subject, that they were a vast improvement on what we had been accustomed to see in the shoeing forges; and as there was no limit to the supply, while uniformity of pattern and quality could always be ensured, a way was opened for getting rid of the grave difficulties attending the shoeing of Army horses.

A complete reorganisation of the system of shoeing was, therefore proposed—or, rather, a new system was suggested, as the old one, always unsatisfactory, was now obsolete and worthless. The contract between the Government and shoers was to cease; machine-made shoes and nails were to be issued to the mounted corps with which to shoe the horses; a slight reduction was to be made in the established number of shoers on the abolition of shoe and nail making, and a certain percentage of men in the ranks, exclusive of the regular shoers, were to be trained to put on shoes—all that was now necessary to be taught. The shoes were to be fitted to the hoofs in a cold state, instead of hot as in the old system; and everything pertaining to shoeing was to be practised during peace as it should be done in the field—simply, quickly, and efficiently.

The comparatively large number of men in the ranks trained to shoe horses would, it was urged, fill vacancies in the shoeing establishment during active service; for it was pointed out that, in cavalry especially, the casualties among the shoers are heavier than among the other men, as they have all the risks and hardships of combatants, in addition to those pertaining to their handicraft.

The absurdity of attempting to teach soldiers to make shoes and nails—even if it were possible to do so with short service—in addition to shoeing the horses, was also strongly dwelt upon; as on an active campaign there is no time for such occupation—to say nothing of the great fatigue and trouble it entails; and owing to the difficulties encountered from weather, locality, and other circumstances, it is often rendered impossible in the open air, when time would otherwise admit of it.

Surely, no one with any knowledge of the subject, or experience of an army in the field, would expect shoes and nails to be made on a campaign. Such a notion can certainly boast of having antiquity in its favour, as we have seen that Edward III. carried field forges with his army when he invaded France, and he also carried flour-mills; probably his tailors and boot makers carried the materials wherewith to clothe and shoe the soldiers; for those were the days when war was leisurely conducted, and there were neither telegraphs, railways, or any other of the numerous appliances which render modern warfare so exacting in point of time and celerity.

Just fancy for a moment what this antiquated and unpractical notion now embraces! A great lumbering field forge, carrying a heavy anvil, sledge-hammers, shoe-making tools, bellows, coal and iron, which necessitates two, sometimes four, horses to drag along, encumbering the line of march, delaying

movement, and—as in Egypt in 1882—is sometimes impossible to drag through sand or mud.

In addition to all this, and without considering the great and useless fatigue imposed upon the men in compelling them to make shoes and nails, the absurdity is greatly magnified on learning that it requires about 15 lbs. of coal and about 6 lbs. of iron to produce a set of shoes that, when ready to be attached to the horse's feet, will weigh only 5 lbs., so that 21 lbs. of materials are dragged along to be manufactured into articles weighing 5 lbs. Nothing need be said as to the nail-rod and tools for nail-making; as no one out of Bedlam, we should think, would propose to make these articles on active service, or at any other time, when they can be obtained infinitely better and cheaper, and ready for immediate use.

Instead of two or three hours being spent in shoeing one horse as in the old system, a handy shoer can perform the task easier and much better in twenty minutes or half-an-hour with these shoes and nails made by the United Horseshoe and Nail Company.

After much experimenting and consideration, the new system was adopted in a modified form. The shoe and nail-making was to be continued to a small extent, three-fourths of the shoes and nails being machine-made and one-third hand-made. The opposition to the change was, as might have been anticipated, somewhat considerable. The shoers in many instances, from pecuniary motives, did their utmost to render it a failure, and the unfounded complaints they made were only too often accepted by their commanding officers as substantial. On investigation by those competent to judge, however, the unreality of these complaints was ascertained.

The advantages of the system have been thoroughly demonstrated on many occasions. The shoes are generally so well shaped and finished, and made of such good iron, while the nails are so perfect and easily driven, that a moderately expert man might easy keep 150 horses thoroughly shod all the year round, instead of, as in the old system, three men being needed to shoe forty. It allows of a large number of men being trained to shoe; in three years nearly 500 men have been taught this method, which is somewhat erroneously designated "cold shoeing." It permits ample time for drill and other regimental duties required of the shoers, and allows of the formation of a staff of competent veterinary hospital assistants for field service. The embarrassing, unwieldy field forge can be dispensed with, ready-made shoes and nails being carried, instead of the heavy and bulky materials and plant wherewith to make them. The machine-made shoes can be altered in shape without heating them, so that if a forge is at all necessary it need only be a pack-saddle one.

Another advantage must not be overlooked. In issuing these shoes and nails constantly at home during peace, the Army Store Department is gaining experience of their issue in the field—a matter of no small importance when it is considered what inconvenience and delay would be caused by mounted corps having wrong sizes or kinds of shoes served out to them; while the patterns and quality will be always under trial and observation.

The home trials of the shoes and nails, when fairly conducted, have always proved satisfactory, the former being found to wear equally well, weight for weight, with those made by hand. And the trials have been no less successful. In the Active Service Report of the Principal Veterinary Surgeon with the Suakin Field Force in 1885, is found the following allusion to it:—

"The horses and mules were kept fairly well shod up during the campaign, and the shoeing was, on the whole, good. The system of cold-fitting was, on my recommendation, generally adopted and the new pattern machine-made shoes and nails were used, as far as was practicable, especially among the lighter horses. The superiority of these shoes over

those of the old pattern has already been clearly demonstrated by the late experiments in the United Kingdom, but I believe this is their first trial on active service. Their principal advantages appear to be:—1. The ease and celerity with which they can be fitted cold; 2. The superior quality of the iron; 3. Their lightness, durability, and finish; 4. The fact that the heavy field forge, with the fuel and plant for shoe-making, can be dispensed with, the small pack forge being merely necessary in the few instances in which heat is required. The immense advantage of the latter, especially in a campaign in the desert, where wheel transport is impossible, can readily be understood."

And the officer commanding the Inniskilling Dragoons severely tested the system while on active service in Zululand not long ago. He says:—

"The regiment having been on field service in Zululand during the last six months, the new regulations as regards cold-shoeing could not be carried out in every particular, though, as far as was practicable and possible, every effort has been made to act on and carry out the instructions issued. Shoeing the horses with cold shoes has been done most fully, and I think very successfully. . . . In a standing camp there can be little difficulty about the details of the system being carried out in their entirety. The material of the shoe is excellent; and if they are gently heated by slight blows from the hammer, they can be opened out or otherwise altered in shape so as to fit the foot without injuring the shoe. The nails are of good quality, well made, and carefully finished. Owing to the regiment being in detachments, and constantly on the move from one place to the other, the horses were all shod with the ready-made shoes and nails supplied for the cold-shoeing, none being shod with the hand-made shoes and nails, as it was an impossibility, under the circumstances, to make them. . . . The shoes and nails are durable and last well. The conditions of service under which these shoes were used were exceptional, as the troops were on field service during the whole period. The shoes, therefore, were tried under severe conditions, and I consider they bore the trial successfully."

Evidence has been given of the breaking-down of the old system in the Jaika and Galeka and Sekukuni campaigns in South Africa in 1878, as it had done on previous occasions; while the testimony in favour of the new system in the Bechuanaland expedition of 1885, and in the Soudan expeditions, all of which were most exacting tests which the antiquated systems could never have encountered, amply demonstrated its merits. Army horses are infinitely better shod now than they were before the introduction of the system, the shoes themselves being almost perfect in shape, and, in comparison with those previously fabricated wearily and tardily by hand, they are as is Hyperion to a Satyr; while their shape ensures good foothold on the ground and solidity on the hoof. But perhaps the most important of all is the opportunity the system affords of having a good reserve supply of shoers in the ranks to fill up vacancies or meet increased demands during war; this was impossible under the old system, which did not even fulfil peace requirements under the altered conditions of Army service. The experience of other countries has been similar to our own in this respect. The Germans in 1870-71, notwithstanding their almost perfect organisation, which included a larger proportion of shoers than we had in our Army before 1888, complained bitterly and loudly of the inconveniences and evils resulting from an insufficient supply of these artisans; and Ableitner, Principal Veterinary Surgeon of the Bavarian Army, who published his experiences of shoeing during the Franco-German War, asserts that an army on campaign requires treble the number of shoers that it does during peace. The French, fortunately for the Germans, were in no better plight—were perhaps worse in this respect; but in both countries the new English system has now attracted attention, and no doubt will be partially

or wholly adopted before long. The Swiss, an eminently practical and prescient people, have already adopted it in its entirety, after three years' thorough trial with the most satisfactory results, as shown by Veterinary Captain Labhardt in his brochure, *La Ferrage a Froid dans l'Armée Suisse* (Berne, 1891). The system of winter-shoeing, also introduced into our Army at the same time as the cold-shoeing with ready prepared shoes and nails, has been likewise adopted by Switzerland, and is in use every winter. By it every mounted soldier can "rough" his horse's feet without the intervention of the shoer. The urgent necessity for some such simple means is well exemplified in the descriptions of campaigns carried on in northern and western countries during winter, and more particularly in the French retreat from Russia in 1812, the Danish retreat from Schleswig in 1864-65, and the disastrous retreat of Bourbaki's *Corps d'Armée* into Switzerland in 1871. There need be no excuse for such misfortunes in the future, as by a simple and comparatively inexpensive contrivance, mounted troops can be enabled to travel at brief notice, and continuously, on slippery ground with absolute safety, so far as their foothold is concerned.

It is some satisfaction to know that in the matter of shoeing Army horses this country has taken the lead in instituting a most beneficial reform—a reform entirely in harmony with the requirements of modern war, while it marks an important advance in the art of horse-shoeing.

IDENTIFICATION OF ANIMALS.*

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THERE is perhaps no part of veterinary practice or animal commerce, in which there is a greater want of method, laxness in detail, and carelessness in recording, than in the description of the subjects handled, and in the noting of points, which will establish the future identification of an animal. For the ordinary layman an equine is a horse or a mule, a bovine a cow, and a canine a dog, irrespective of age, colour, sex, or condition of servitude. A stallion is a rarity, a steer is a beef animal, and by many, a bitch, bull, or gelding, is not considered as mentionable in polite society. This inattention to definite terms leads not only to vagueness in veterinary writings, but also frequently causes the writer to commit errors in English, which could have been avoided by a definite fixation of the subject matter.

In the description of an animal for veterinary purposes, whether in an expert examination for soundness, in judging, or in a legal controversy, or in a clinical description, or for registration in a stud-book, a definite course of examination and a methodical system of recording should be observed. If this is done, and the written description follows the same form in every case, it educates the observer to note the small, and sometimes apparently trivial, differences, which at times are the important points upon which an identification is based.

The table below outlines the course to be followed in an ordinary record of the identification of an animal:

I. DESCRIPTION OF ANIMAL—*a*, Species of animal, race, family; *b*, Sex; *c*, Age; *d*, Height and weight; *e*, Colour; *f*, Accidental markings.

II. DESCRIPTION OF ABNORMAL OR PATHOLOGICAL ALTERATIONS.

With the domesticated animal, custom has established certain specific terms which define species, sex and age, and these should be used according

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to their exact meaning, and with no other meaning so far as possible, in all expert writings.

GENUS EQUS; *Species caballus.* Specific term, Horse. The animal is—a *Foal*, irrespective of sex, from birth until weaned; a *Weanling* when weaned, until it becomes a *Yearling*. The male animal is—a *Colt*, until the mouth is made, or until castrated; custom has, however, accepted the first indication of the corner teeth or four years, as the age at which he becomes a horse; a *Gelding*, after castration, at any age; a *Horse* or *Stallion*, after the mouth is made, or earlier, if he stands for service; a *Ridgling*, if one testicle has not descended to the scrotum. The female is—a *Filly*, until the mouth is made, or until bred; a *Mare*, after the mouth is made, or sooner, if bred.

Species asinus. Specific term, Ass. The ass is a *Foal*, until weaned; after that the male animal is a *Jack*; the female animal is a *Jenny*. The male mule is known as a *Jack Mule*, irrespective of gelding, and the female as a *Jenny Mule*. The hybrid foal of the male ass and the mare is the true mule. That between the stallion and the female ass is called the *Hinny*.

GENUS BOS; *Species domesticus.* Specific term, Neat Cattle. The animal is—a *Calf* until six months old (the natural time for weaning); a *Bullock* is a young bull, or any male of the ox kind; a *Bull* is the male animal; a "*Steer* is the castrated male of neat cattle. He is called an ox calf, or bull calf, until he is twelve months old, a steer until he is four years old, and after that an ox or bullock," *Youatt;* an *Ox (vide)* "steer"; a *Stag* is a castrated male; a *Heifer* is the female until bred, or until the mouth is made; a *Cow* is the female after breeding, or when the mouth is made.

GENUS OVIS; *Species aries.* Specific term, Sheep. The animal is—a *Lamb* until a year old; a *Ram* or a *Tup*, when male over eighteen months old, and has its first intermediate permanent teeth; a *Ewe*, when female over eighteen months old, and has its first intermediate teeth; a *Wether*, when a castrated male; a *Hog-Hogget* is the young sheep before it has been shorn.

GENUS CAPRA; *Species hircus.* Specific term, Goat. The animal is—a *Kid*, until a year old; a *Billy* is the male; a *Nanny* is the female.

GENUS SUS; *Species scrofa.* Specific term, Swine, Pigs, Hogs. The animal is—a *Suckling* until weaned; a *Roaster*, from four until eight weeks old; a *Pig* until a year old, male or female; a *Porker*, *Porket*, or *Porkling* is a young hog or pig; a *Boar* is the adult male; a *Sow*, the adult female; a *Shoat*, *Shote*, or *Shoot* is a growing hog; a *Barrow* is a castrated hog; a *Farrow* is a litter of pigs.

GENUS CANIS; *Species domesticus.* Specific term, Dog. A *Puppy* is—the young; a *Dog* is the male; a *Bitch* or *Slut*, the female (the former term is preferable).

GENUS GALLUS; *Species domesticus.* Specific term, Chickens, Barnyard Fowls, Pullail. A *Cock* is the male; a *Cockerel* is a young cock; a *Stag* is a young game cock; a *Capon* is a castrated male; a *Hen* is the female; a *Pullet* is the young female; *Poultry* are the fowls fed for the table.

AGE. Beyond the definitions made by the specific terms just mentioned, the question of age is too long a subject to enter into in a paper of this kind, and is also one which has been made the subject of such minute study and description in numerous writings, that they can be referred to, for accuracy.

HEIGHT. The horse varies from 9 hands to 22 hands in height; under 14 hands he is known as a pony; cobs measure from 14 to 15½ hands. Some of the great Belgian and English draft horses reach 18 hands or even more. Barnum showed, a few years ago, an ungainly broken-kneed bay coach-bred

gelding, that measured 22 hands. On a written certificate the heights should be given as under standard (S) or estimated (E). The height is taken at the highest bony point of the withers, the spinous process of the seventh dorsal vertebra. Care should be taken to see that the horse being measured is standing on an exact level with the examiner, and with the instrument used. The ordinary form of instrument used is the *standard*, a rod six feet in height with a movable cross bar, the latter usually fitted with a spirit level. Care should be taken to see that the upright is perfectly vertical, as a small inclination will make an important difference in the horizontal bar. When there is a decided difference in the height of the withers and croup, as sometimes occurs, it should be noted, but the record is taken from the former. It must be remembered that in double teams, the form and style in carrying the head will frequently render two horses a good match, when the standard shows a decided difference in their height.

WEIGHT. The question of weight, in the description of horses, is a custom almost exclusively American. The average weight of an ordinary horse is about 1000 lbs.

Ponies are under	800 lbs.
Light roadsters	950 lbs.
Ordinary roadsters and saddle horses..	950 lbs. to 1150 lbs.
Coach horses	1000 lbs. to 1350 lbs.
Light draft horses	1000 lbs. to 1350 lbs.
Medium draft horses	1350 lbs. to 1500 lbs.
Heavy draft horses	1500 lbs. and over.

With a severe fever or other illness a horse may lose 25 lbs. to 40 lbs. a day, 200 lbs. in a week.

COLOUR. The "coat" of animals is made by an ensemblage of the colour of the skin itself (epidermic pigment), the character and colour of the hairs, and the products of secretion and excretion of the glands of the skin (sebaceous and sudoriparous glands.)

In wild animals the coat is almost invariably distinctive of the species of animal, although varying frequently, somewhat with the age of the animal, and with the sex. In all animals the hairs are generally coarser and longer over the neck and withers in the male than in the female; and the colour of the former is, in most species, darker and more pronounced than in the latter. Bnt while wild animals have usually a uniform colour, domesticated animals, and many wild ones, which have been bred in captivity, are subject to great variation in colour, and their coats are subject to the introduction of white, which is rare in wild animals.

THE SKIN. The skin may be pigmented throughout with a deposit of a leaden or brick-dust colour, which may even extend to the mucous membrane of the nostrils, tongue, and hard palate, or the pigment may be entirely absent, or may be absent only from certain parts; in the latter case, it is usually absent from the neighbourhood of the natural openings—the lips, the eyelids, the genitals, and the anus; and from the extremities—pasterns, fetlocks, legs, and face.

THE HAIRS. *Character.* The hairs are of two sorts; the hairs proper, which cover the surface of the body, and are short, fine, and soft, and lie closely together in a definite direction, for each given part of the body. These are shed annually or oftener. The longer coarser hairs, which, under the name of mane, forelock, tail, tentacles, eyelashes, moustaches, and whiskers, grow from the crest of the neck, the tail, the eyelids, and the lips, and on the fetlocks of coarse-bred animals, are persistent. The hairs of the hog are always coarse and are called bristles, and those of the sheep of great fineness

and crinkled, are known as wool; both of these terms are used for the hair of the other animals, when, in its texture, it resembles them.

Colour. The colours of animals are not as brilliant as those of a flower or of the plumage of birds, but we can recognize that, like these, they are based upon the primitive colours of the prism—red, blue, and, yellow. In the horse we have as primitive colours a modification of—*Red*, bay and chestnut; *Blue*, steel-grays and mouse-colour; and, *Yellow*, duns; *White*, absence of all colours, and, *Black*, presence of all colours. From modifications in the shades and tints of these, and from combinations of them we have the colours of the coats. Professor Neuman divides the coats into three categories: 1. *Primitive coats;* 2. *Derived coats;* and 3. *Conjoined coats.*

Primitive coats, are those which the animal has at birth. *Derived coats*, are those which appear after birth, and are due to the introduction of white. *Conjoined coats*, are those in which there is the presence in the same animal of two coats, primitive or derived.

1. *Primitive coats.* Form three groups: A. *Simple coats*, with but one single colour, as black or sorrel. B. *Composite coats*, formed of hairs of two colours, black for the mane, tail and extremities, and yellowish, reddish or bluish for the body, as the dun, bay or mouse colour. C. *Mixed coats*, are made of hairs composed of two colours, usually yellow at the base and black on the end; this is a rare colour, and when it exists in the horse, is often improperly confounded with the roans.

A. *Simple coats.* The simple coats are those made of hairs of but one colour, the *Black*, *Sorrel*, or *Chestnut;* Goubaux and Barrier exclude the *White* as a colour, as in the so-called white horse there is invariably more or less trace of black or other colour making it a very light grey. If it can be shown that absolutely white (not albino) horses exist, then, white can be included as a simple coat.

a. *Black.* The black may be a dull, uniform, dead black, without any reflecting tints, or the latter may be so marked in reddish or yellowish hues as to confound the coat with that of a brown bay. It may have the brilliant reflection of jet.

b. *Chestnut* or *Sorrel.** This is a yellowish or brownish red, which comprises many shades. Commencing with the lightest in colours there is: 1. *Cream colour*, which may be subdivided, as light, ordinary, or dark; 2. The *Light sorrel*, has a decidedly yellowish tint, like the coat of the lion. An ordinary chestnut turned to pasture for a month will sunburn into this colour; 3. *Sorrel* or *chestnut* (ordinary) is a cinnamon colour, the hairs of mane, tail, and legs, must have the same colour as those of the body; 4. *Washed sorrel*, is a degenerate light sorrel, but the legs, mane, and tail are very light or almost white; 5. *Dark sorrel*, is a brownish cinnamon colour; 6. *Cherry sorrel*, has a decided bright red tint; 7. *Chestnut* (proper) is a rich uniform brownish red, like that of a ripe chestnut; 8. *Burnt sorrel*, is a dark rich brown, like roasted coffee. Horses of this colour invariably have more or less white hairs sprinkled over the body, and a mane and tail of almost a white or silver colour. According to the reflection of the tints of a sorrel, it may be golden, fox (copper), or bronze. White marks on the head and legs of sorrels are common.

B. *Composite coats.* Composite coats are those with two distinct colours, a reddish, yellowish, or bluish one for the body, and black for the mane, tail, and legs; they are the *dun*, *bay*, and *mouse* colour.

a. *Dun.* The dun has yellowish hairs over the body, to the knee and hock and over more or less of the face. The mane, tail, and hairs on the cannon

* These terms are used as synonymous.

and fetlocks are black. A dun may be *light, ordinary*, or *dark*, in the latter case taking the name of *Buckskin*. Duns frequently have a black line running along the centre of the back, the black cross of the ass on the withers, and the transverse black marking of the zebra on the legs. The light dun is sometimes almost the same as a *cream colour*, but can always be distinguished from it by the presence of black on the extremities. The dun is known in French as an *Isabelle;* according to Bouillet, *Dictionnaire d'Histoire et de Géographie*, the Archduchess Isabelle of Austria, daughter of Philip II. of Spain and ruler of the Netherlands, accompanied her husband at the siege of Ostend, and made a vow not to change her linen before the conquest of the place. The siege lasted from 1601 to 1604, and the colour of the chemise of the Princess gave origin to the name.

b. *Bay.* In the bay the colour of the body is red, which may vary from a cherry to a mahogany, and is distinguished from any similar shade of sorrel, by the presence of the black mane, tail, and legs, although in the last the black may be reduced to a narrow circle of black hairs, around the coronary band, The *Bays* are: 1. *Light Bay*, these frequently have the black cross and zebra stripes on the withers and fore legs; 2. *Bay* (ordinary) distinctly red; 3. *Blood Bay* (mahogany) darker; 4. *Dark Bay* approaching brown; 5. *Brown Bay* or *Brown;* becomes nearly black in winter, but always has a reddish tint around the muzzle, armpits, belly, flanks, and thighs, while the sunburnt *black*, in summer, is black in the same places.

White markings on bays are usually less frequent and less extensive than on sorrels.

c. *Mouse colour.* The mouse colour is less frequent in the horse than in the ass and mule. It is an ashy blue over the body, while the mane, tail and legs of the animal are black. It is frequently accompanied by the black cross and zebra stripes.

C. *Mixed coats.* This is a rare colour, composed of hairs which are yellow at the base and dark at the tips, like those of wolves, and some wild animals. It is probably usually confused with the roans, but should not be.

2. *Derived Coats.* Derived coats are those due to the introduction of white into the primitive coat at some period after birth; they are the *Grays* (including white) and *Roans.*

A. *Gray.* Goubaux and Barrier say: "Classically, gray is a mixture of white and black hairs. Practically, it is far from being so. Take by chance ten gray horses, and it is readily seen that this definition is not sufficient. The dark hairs *are not always black.* They are often brown, chestnut or reddish (bay), more rarely yellow. The *White* hairs are sometimes washed yellow." Brivet says: "The gray coat is excessively variable in tint; it is a sort of chaos, mixed with hairs of different shades."

The gray is a mixture of light and dark hairs over, not only the body, but also in the mane, tail and legs; it can have for basement colour, black, bay, sorrel or dun. A gray may be: 1. *Very little gray*, showing only a few dark hairs, usually called white; 2. *Light gray*, with more dark hairs, especially on mane, tail and legs; 3. *Gray* (ordinary), with about an equal mixture of white and black hairs; 4. *Dark gray*, with a predominence of dark hairs; 5. *Iron gray* (steel), with a bluish tinge, like that of a freshly broken piece of steel; (a darker shade might be called *slate colourea);* 6. Grays can further be distinctly characterized as *Dirty*, *Dun* or *Roan* grays.

Grays usually become lighter as the animals become older, so that at different ages the same animal would need an altered description. The *White* if recognized as a coat, or in the ordinary case, when it is a coat derived with age, from the grays, is *milk*, *china* (bluish), *dirty* or *rose* white; these qualifications indicate the tint given to the white, without further explanation.

The *Strawberry roan* (or peach) is a sorrel, with numerous white hairs in body, mane and tail; it may be light or dark. A strawberry roan is always much lighter after clipping.

. B. *Roan.* The roan has a coat with three colours of hairs, black, reddish and white, that is a body with numerous white hairs over the body. It may be *light, medium* or *dark.* According to the colour of the hairs which predominate and the distinctive tint of the roan, it may be further qualified as a *blue* roan, a *red* roan (not to be confounded with *strawberry* roan, white and chestnut), a *white* roan, etc.

3. *Conjoined Coats* are those in which the same animal has two or more distinct primitive or derived coats on different parts of the body. They are represented by the *Piebald* or *Skewbald* which has a mixture of large white patches with other colours. The piebald strictly is a mixture of white and black, like the magpie from which it takes its name, but by custom includes the others; "*pie*" refers to the white; for more definite description, we may consider: a *pied-black*, a *pied-sorrel*, a *pied-bay*, a *pied-roan* or a *pied-gray* as a black, sorrel, bay, roan or gray with larger patches of white than of the dark colour, while a *black-pie*, a *sorrel-pie*, a *bay-pie*, a *roan-pie* or a *gray-pie* is one in which the white is of less extent. We may also describe the horse as being *pied*, on near or off, belly, side, withers, or wherever the white may be. The colour of the mane and tail should be indicated if the *pie* is a mixed one.

In rare cases there are horses, with conjoined coats of black and bay, two colours of bay, dun and gray, etc. These may be indicated by special description as *pied* of such and such colour.

Spotted (Tiger spots). Spotted horses are found, especially in Denmark and from the valley of the Danube, and in the United States from Virginia and Michigan, which can be described as of such or such a colour, spotted with such or such a colour, the size of spots and location to be given.

Special Markings. In addition to the colour of the coat, it may have peculiar growth of the hair, tints, or discolouration, which give it a characteristic effect, and serve to identify the animal.

They may be divided into: 1. *General Markings;* 2. *Markings of the Head;* 3. *Markings of the Body;* 4. *Markings of the Legs;*

General Markings comprise reflection of colour, dark hairs, white hairs, black hairs, reddish hairs, cowlicks, and discolouration of the skin.

Reflection of colour may be called: *Jet*, if a brilliant black; *Silvery*, if a bluish, porcelain white; *Golden*, for rich sorrels, bays and duns; *Bronzed*, for metallic reds and browns; *Watered*, when presenting alternate shades or undulations of colour.

Darker hairs:—Dapples are spots usually the size of a silver dollar composed of darker, more brilliant colours, than those of the rest of the body.

White hairs:—Absence of white hairs defines a horse as *solid* in colour; *Scattered* white hairs, when not of sufficient number to make a derived coat, should be noted; *Fringed*, is a mixture of white hairs and those of the coat of the animal surrounding a circumscribed white spot.

Careful attention thould be given, to noting the difference of natural white markings and not to confound them with *Accidental white*, which is the result of wounds, accidental scars, rubbing of harness or saddle, and blisters.

Black hairs:—Fly Specked is said of small spots or black hairs, seen most frequently in grays, sometimes in chestnuts, bays and duns; *Ermined* is the presence of larger spots of black, occurring most frequently in or along the borders of white markings; *Burnt* is the black shading of various coats, most commonly seen in sorrels.

Red hairs:—Flea Bitten is said of small spots of red hairs over the body and more frequently on the head and face, this is most frequently seen in old

grays; *Sun-burnt* is the reddish hue often seen in blacks; *Roan* (adjective) is the qualification used when reddish hairs appear over a gray, as *roan gray.*

Direction of hairs:—Cowlicks. Cowlicks are hairs running in irregular directions from, or to, a given point; if the first they are eccentric, if the second concentric. They occur on all horses in the centre of the forehead, on the breasts, and on the flank. They may occur at other parts of the body, and should then be noted marking the size of the cowlick and direction of the hairs. They are apt to occur in rich colored coats, and are often very distinctive of family. The trotting horse *Commonsense* is peculiarly marked with them. The Arabs consider them a mark of great quality. *Feathered* is the term used when the divergence or convergence of hairs takes place from an elongated centre.

Discoloration of the hairs or skin:—Washed is the term given to the faded tint seen with many coats. In bays it is found in the light or yellow coloured legs; it is frequent on the legs of sorrels. *Leprous spots* denote the absence of pigment from the skin in spots or patches of variable size. They are frequent on the genitals and lips, often occur on the eyelids, anus, and under the white hairs on the extremities, and may be found on any part of the body. If these patches have spots of pigment in them, they are termed *Marbled.* Geoffroy St. Hilaire, Curnieu and Goubaux have noted horses entirely denuded of hair.

PECULIARITIES OF THE HEAD. White may be present in variable extent, but is usually in more or less definite form and takes with each a specific name.

A Star is where the hairs make an eccentric cowlick, running in all directions; *A Flame* is where they run in one direction from a cowlick, and the direction should be noted as to right or left, or if in the rare direction downwards; *A Shield* is in the form indicated by the name; *A Crescent* (quarter moon) faces up or down, to right or to left, and should be so noted; *A Blaze* is a white stripe down the face, it may be to right or left, may commence above with a star and may terminate below with a white nose or with leprous markings; *A Snip* is a little stripe of white on the nose; *Bald Face* is where the whole face is white.

Any of these markings may be ermined or fringed. The face may be fly-specked, or flea-bitten.

Moustaches or excessive growth of rather coarse hairs are at times seen in the upper lip of horses, especially those with Irish and Breton blood, from Vermont and Canada, Hackneys, etc.

Grays, roans and duns have at times very dark, almost black faces, which are characteristic.

Wall Eyed is applied to eyes in which the dark pigment of the iris is replaced by a light gray or bluish white. It may be complete or incomplete, and may affect only one or both eyes.

Brivet says that wall eyed horses do not see well in the dark. The ordinary pigment of the eyes is sometimes replaced, in one or both, by a tawney yellow or wine colour.

MARKINGS ON THE BODY:—*Mule Stripe* is a black or dark red stripe extending on the median line from the withers to the base of the tail; *The Cross* is a stripe at right angles to the Mule Stripe from the withers down the shoulder; *White or Washed Hairs* may occur in patches over the body; *Zebra Stripes* are transverse black bands, seen usually on the upper arm, sometimes as low as the knee.

MARKINGS OF THE LEGS.—White on the extremities is described as "white," "coronary," etc.; "pastern" or "fetlock" when it simply surrounds the coronary band, covers the pastern or reaches the fetlock; *A Stocking* is

white reaching to the knee or hock; *A Half Stocking* reaches half way up the cannon. These white markings may be *incomplete* (internal or external), *fringed, ermined, flea bitten*, etc. When white occurs on one leg only, the leg is indicated. When on two, they are defined as anterior biped, posterior biped or diagonal biped (left or right), according to the fore leg of the diagonal. When three legs are white, they are described white *except* the odd leg.

Identification may be made more complete by indicating the complete or partial want of pigment in any of the hoofs.—*Journal of Comparative Medicine and Veterinary Archives.*

TUBERCULOSIS IN GERMANY.

FOR many years the subject of tuberculosis in cattle has attracted serious attention in Germany, because of the heavy loss it occasions, and also from the presumed risk of mankind to infection, from consumption of the flesh and milk of diseased animals. But nothing in the way of legislation for its limitation or suppression has yet been attempted. The loss to cattle-owners, from the disease among their stock, has prompted them to present a petition to the Minister of Agriculture at Berlin, praying that compensation may be granted to them from the State. The Minister has, however, not taken it into consideration; in his opinion help can be afforded by means of local cattle insurance associations, &c.

The subjoined table gives some estimates, made at the suggestion of the Chancellor of State, of the spread of the disease in this empire from October, 1888, to October, 1889:—

	Total number.		In slaughtering houses.	
	Head.	Per cent.	Head.	Per cent.
Bulls	2,935	5·7	2,125	8·2
Oxen	7,817	15·2	5,410	20·5
Cows	35,241	67·6	17,080	64·8
Heifers	2,867	5·5	805	2·7
Calves	208	0·4	102	0·4
Miscellaneous ..	3,309	4·5	900	3·4
Total	51,377		26,352	

From these figures, which fall short of the actual numbers, it will be seen that it is necessary to take steps for the removal of this disease, or at least to limit the spread of it.

GREAT MORTALITY AMONG HORSES IN RUSSIA.

THE terrible famine which has prevailed in Russia since last autumn, and which has produced such dreadful results among the human population, has been also very disastrous to horses. In the British Consul's report on trade and commerce in Taganrog, just issued from the Foreign Office, in reference to the effect of the famine, mention is made that up to last January it was estimated that 500,000 horses had died in the province of Samara alone. From a calculation, it was believed that of a million of horses no more than 400,000 would be alive at the end of last month, and these would be in such an exhausted condition as to be useless for heavy agricultural labour. This is, indeed, a serious matter, not only presently, but prospectively, as it will require many years to replace these animals, and agriculture will accordingly suffer, even if

the season should prove propitious. We do not hear that the starving peasants availed themselves of the flesh of the horses as food, and it might be inferred that they did not, but, like our soldiers in the Crimea, preferred to perish rather than consume such food. The French at Metz and in Paris in 1870-71 were not so "nice."

HISTOLOGY OF RABIES.

In the *Annales de l'Institut Pasteur* for April, Babes describes some histological appearances which he has met with in cases of rabies, and which he regards as to some extent characteristic of the disease, and therefore likely to be useful in determining the nature of a doubtful case. The appearances which he describes consist of an infiltration, forming miliary inflammatory foci, particularly about the motor cells of the cord and medulla, the infiltration cells in some cases even penetrating into the ganglion cells. The same infiltration is also found about the small vessels, and these last show proliferation of their endothelial lining. The nerve cells themselves show absence or alteration of the nucleus, and sometimes karyomitotic changes, with vacuolation of the cell protoplasm. He lays stress upon the miliary character of the inflammatory foci, as enabling one to distinguish the *post-mortem* appearances of rabies from those of tetanus or of poisoning by certain substances. He concludes that in doubtful cases of rabies the search for these lesions should always be carried out, and should only be omitted when the cord is received in too advanced a state of decomposition. If there is no perivascular or pericellular infiltration of the kind described, the chances are that the disease is not rabies; but the appearance of these lesions makes it probable. These patches of infiltration are less pronounced in the cords of animals that have been killed than in those that have died from the disease; and in prolonged cases the infiltration becomes very pronounced and very diffuse.

HEART DISEASE IN GREYHOUNDS.

A CORRESPONDENT, writing to *Land and Water*, remarks: "Greyhounds are said to be liable to heart disease, and Master McGrath is reported to have died from it. I had a rough dog, of Father Maguire breed, that fell down dead on its way to the kennel at night, although it had no excitement during the day. I have heard of other greyhounds so dying, also of a Newfoundland that was following a bicycle."

INFECTION BY TUBERCULOUS MEAT.

In the *Münchner Med. Wochenschrift*, for May 17th, it is stated that Kastner, in nine out of eleven cases, obtained positive results by the injection of the juice expressed from the confiscated flesh of seven tuberculous animals. The injections were made into the abdominal cavities of guinea-pigs, the juice of fresh flesh with no naked-eye appearances of tubercle being alone used. If an inflammatory condition had been previously induced by the injection of ammonia, the development of tubercle was more marked, and spread in each such case to the lungs. In the light of his previous experiments, the author says that complete calcification of the tuberculous processes in the animal

would appear to render the chances of infection slight; but if caseous masses are found the danger of infection must be admitted. He is of opinion that the estimation of this danger of infection must thus be based upon the morbid anatomy, and that a thorough inspection must be made. In an editorial postscript the observation is made that, according to a quite recent Prussian rescript, the flesh of tuberculous cattle is looked upon as dangerous to health, either when the flesh contains tuberculous nodules or when the tuberculous animal is wasted, even if no such nodules are present in the flesh. The great infrequency of tuberculous nodules in the muscles is also referred to.

COURT PRESENTATION.

At the levée held at St. James's Palace by H.R.H. the Duke of Connaught on June 13th, Mr. J. F. Simpson, F.R.C.V.S., Mayor of Maidenhead, was presented by his brother, Sir Henry Simpson.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

New Members of the Profession.

[Marked thus * passed with great credit.
" " † " " very great credit.
‡ These have yet to sign the register of members and to receive their diploma.]

At a meeting of the Court Examiners held in London on and between May 16th and May 20th, 1892, the following students from the Royal Veterinary College passed their examinations:—

Mr. D. P. Davies, Lampeter, Cardiganshire.
" Arthur Wall, Woodstock, Oxon.
" H. H. Truman, Whittlesea, Cambs.
" T. F. Prime, Westow Hill, Norwood.
" W. Collinson, Rotherham, Yorks.
" H. C. Taylor, Alford, Lincolnshire.
" G. C. Lowe, Dockhead, S.E.
" P. A. Wilkes, Henwick, Worcester.
" T. G. Sikes, Mallow, Co. Cork.
" A. M. Ward, Yelverton, S. Devon.
" G. D. Norman, Wedmore, Weston-super-Mare.
" F. G. S. Hobday, Burton-on-Trent.
" A. J. Cattell, Brixton.
" P. W. Cooper, Blackrock, Co. Louth.
" A. J. Lane, Highbury New Park.
" W. T. Broad, Bath.
" C. J. Reakes, Littlebourne, Kent.
* " F. W. Thompson, Sheffield.
" E. M. Dixon, Woodford, Essex.

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‡ Mr. H. A. Pattison.
‡ " A. E. Clarke.
‡ " E. A. Prudames.
‡ " C. S. Ware.
‡ " H. Bidlake.

‡ Mr. J. B. Young.
‡ „ G. W. Lamb.
‡ „ T. F. Hornley.
‡ „ W. Maynard,
‡ „ F. L. Clunes.

The following students passed their Second Examination :—

Mr. N. B. Wallis.
„ W. Hunting.
„ W. H. Herford.
„ T. S. Relf.
„ E. R. Sherren.
„ C. A. A. Ewin.
„ T. B. Bindloss.
„ T. Thornton,
* „ I. G. P. Carter.
* „ H. H. Whitlamsmith.
„ H. J. Parkin.
„ G. P. Hollings.

*Mr. F. W. Carless.
„ C. H. Beadnell.
* „ W. Fyrth.
„ R. Shepherd.
* „ W. T. G. Hodgins.
„ G. K. Walter.
„ I. O'Rourke.
* „ T. U. Carr.
„ F. T. G. White.
„ A. H. Towne.
* „ I. T. Brain.
„ C. Crowhurst.

Mr. R. J. G. Voisin.
„ F. Wooff.
„ E. E. Seldon.
„ H. W. Davie.
* „ A. C. Wilson.
„ C. H. Delacherois.
„ H. W. Billinghurst.
„ F. B. Lowe.
„ B. Franklin.
„ F. M. C. Hunt.

The following students passed their First Examination.

Mr. P. Brownrigg.
„ C. Tailby.
† „ H. Bowker.
„ H. H. Nichols.
„ R. Spooner-Hart.
„ W. C. Prudames.
* „ M. R. Jones.
„ R. W. J. Balls.
„ H. C. Reeks.
* „ W. J. Foreman.
* „ H. Walpole.
„ H. Peele.
„ H. Keylock.
„ J. E. Adams.
„ A. D. Bingham.
* „ H. E. Browne.
† „ W. L. Harrison.

Mr. S. Cadogan Masterman.
* „ J. Tagg.
„ I. Murphy.
„ J. F. Coley.
* „ W. A. Wood.
„ A. E. Boyer.
„ E. M. Jarvis.
„ W. S. Anthony.
* „ A. L. Farrant.
* „ H. P. Hogben.
„ H. L. Roberts.
* „ P. W. Hill.
„ E. T. Strickland.
* „ W. Pauer.
* „ D. W. James.
„ I. S. Wood.

†Mr. T. J. Frost.
† „ E. T. Robertson.
* „ A. H. Clapp.
„ H. Reynolds.
„ R. Gilby.
„ W. Beddard.
„ G. H. Williams.
„ H. V. Low.
„ V. Gazi.
„ G. T. Dunne.
† „ C. Hoole.
„ A. P. Calastreme.
„ I. I. Kelly.
† „ W. H. Prime.
„ F. Richardson.
„ F. M. Skues.

ARTHUR W. HILL,
Secretary.

At meetings of the Court of Examiners held in Glasgow and Edinburgh on and between May 20th and 31st, the following gentlemen passed their final examination and were admitted Members of the Royal College of Veterinary Surgeons.

GLASGOW COLLEGE—

Mr. D. Hamilton, Fordingbridge, Hampshire.
„ J. Furniss, Leeds.
„ W. Dawson, Cootehill, Co. Cavan.
„ W. O. Robertson, Selkirk.
„ A. Jackson, Glasgow.
„ D. Stewart, Inchinnan, Renfrew.
„ R. Weir, Carstairs.
„ S. Martin, Dervock, Co. Antrim.
„ J. Forrest, Glasgow.

Mr. J. Neil, Glasgow.
„ W. Welsh, Glasgow.
„ A. Campbell, Ruthergen.

DICK COLLEGE—

Mr. C. Baxter, Elgin.
„ J. Dawson, Newcastle-on-Tyne.
„ R. Forman, Wigan.
„ W. J. Doyle, Enniscorthy.
* „ T. G. Heatley, Winsford, Cheshire.
„ J. W. Little, Abbeytown, Cumberland.
„ J. Loughran, Ballygawley, Tyrone.
„ A. Macfarlane, Killin, Perth.
„ J. Pringle, Ford, Midlothian.
„ J. Brown, Perth.
„ W. Cureton, Bridgnorth.
„ J. R. Carmichael, Edinburgh.
„ H. S. Clark, Brigg, Lincolnshire.
„ J. Hoggan, Liverpool.
„ G. Montgomery, Lisnaskea, Fermanagh.
„ A. J. Robertson, Pitlochry, Perth.
„ W. H. Hawthorn, Scarborough.
„ P. J. Mullan, Mallow.

NEW COLLEGE—

Mr. J. C. Carpenter.
„ A. P. Gribben, Sydney, N.S.W.
„ J. Lund, Kelso.
„ E. Nelson, Manchester.
„ E. H. Stent, Manchester.
„ A. G. Todd, Darlington.
„ G. M. Williams, Sligo.
„ E. E. Wood, Manchester,
„ H. H. Baker, Scarborough.
„ J. P. Walters, Cheltenham.
„ A. W. Dows, Hull.

The following students passed their second examination:—

GLASGOW COLLEGE—

Mr. J. N Mark.
„ H. McCartney.
„ S. B. Clode.
* „ R. Moore.
* „ A. McDougal.

Mr. J. Kerrigan.
„ H. E. H. Davies.
„ A. Watts.
„ H. O. Boyle.
„ J. Magee.

Mr. A. P. Stewart.
„ W. L. McKenzie.
„ H. Mc F.Anderson.
„ F. Waddington.
„ A. C. Howatt.

DICK COLLEGE—

Mr. R. T. Ashby.
„ G. Chater.
„ D. C. Campbell.
„ E. J. Conroy.
„ R. Dickie.
„ W. E. Elkins.
* „ H. Flood.
„ J. Grant.
* „ G. Green.
„ R. Harris.
„ J. Harry.

Mr. F. A. Johnstone.
„ H. C. Jagger.
„ T. Kyffin.
„ J. Laverty.
* „ J. W. Lazonby.
„ J. A. Mathieson.
„ T. McCaffery.
„ R. McGregor.
„ C. Norgate.
„ O. A. O'Neil.
„ R. W. Paley.

Mr. J. H. Pierse.
„ A. Panton.
„ R. W. Russell.
„ J. W. Senior.
* „ J. P. Slidders.
† „ J. D. Stewart.
„ A. M. Trotter.
„ T. J. Vahey.
„ P. Wilson.
* „ A. Wilson.
„ J. H. White.

NEW COLLEGE—

Mr. W. A. Allott.	Mr. L. G. Farr.	Mr. T. F. O'Donnell.
„ F. Argyle.	„ B. A. Fowler.	„ R. Peech.
„ O. T. Archer.	„ G. E. Gibson.	„ E. Plant.
„ H. B. Allen.	„ M. Hutchinson.	„ F. H. Shore.
„ J. R. Baillie.	„ J. W. Irving.	„ F. W. Smith.
* „ H. G. Bowes.	„ M. F. Lynch.	„ H. W. Southall.
„ J. P. Byrne.	„ W. Malone.	
„ F. Douthwaite.	„ T. R. Mulcahy.	

The following students passed their first examination :—

GLASGOW COLLEGE—

Mr. A. Bachop.	*Mr. J. C. Kyle.	*Mr. T. C. Furguson.
* „ A. Nairn.	„ J. Malqueen.	„ J. A. Todd.
† „ J. Gorman.	„ A. T. Watts.	* „ A. Hart.
* „ M. White.	„ J. Hill.	„ W. T. Blane.
„ D. Brown.	„ J. Dick.	

DICK COLLEGE—

Mr. J. C. Argo.	Mr. P. Howard.	Mr. A. Oxenham.
„ A. G. Bakewell.	„ N. Irvin.	„ S. Pennington.
* „ J. Bigley.	„ E. Martin.	„ E. C. Russell.
„ W. T. Bolton.	* „ F. C. Mason.	„ W. E. Russell.
„ J. Edgar.	* „ G. Mavor.	* „ T. Scotson.
* „ H. Featherston-haugh.	* „ D. Morrison.	„ T. Sherlock.
	* „ A. M. Macfarlane.	„ R. C. Smith.
* „ G. P. French.	† „ S. Morton.	„ H. Thompson.
† „ G. J. Furniss.	„ J. M. McMaster.	„ J. Wardrope.
„ W. Harvey.	„ J. McArthur.	„ R. S. White.
„ W. C. Healey.	„ J. McDonald.	* „ J. Young.
„ A. Holbron.	* „ L. McLaren.	„ J. J. Neeson.

NEW COLLEGE—

Mr. P. Abson.	Mr. A. S. Milne.	Mr. A. T. Waller.
„ A. M. Bruce.	„ W. A. Pallin.	„ W. Webster.
„ A. O. Hughes.	„ E. Segar.	„ J. H. Wright.
„ W. Hughes.	„ W. D. Simpson.	
* „ W. Jowett.	„ J. Spreull.	

R. RUTHERFORD, F.R.C.V.S,
Sec. to the Board of Examiners.

MEETING OF COUNCIL HELD MAY 31ST, 1892.

Veterinary Colonel LAMBERT, C.B., President, in the chair.

Present:—General Sir Frederick Fitzwygram, Bart., Veterinary-Lieutenant-Colonel Oliphant, Veterinary Captain Raymond, Professor Penberthy; Messrs. Fraser, Hedley, Hartley, Hunting, Kidd, Mason, Malcolm, Merrick, Mulvey, J. F. Simpson, Trigger, and Wragg, Geo. Thatcher (Solicitor), and A. W. Hill (Secretary).

The SECRETARY read the list of absentees :—Messrs. Donald, Edgar, Kettle, McCall, Taylor, Walley, Nisbet, and Wheatley.

The petition of Professors McCall and Williams to the Privy Council with reference to the new Charter, the purport of which appeared in last month's journal, was read.

A correspondence between Sir Henry Simpson and Mr. Thatcher, the Solicitor of the College, was read with reference to the new Charter.

The resolutions arrived at by the last meeting of the Steel Memorial Committee were brought before the Council, and it was agreed that they should be discussed at the next quarterly meeting.

PRESIDENT asked if any member of Council wished to make any remarks upon the petition of Professors McCall and Williams?

Mr. THATCHER (Solicitor) said he thought they would not do much good by discussing it at that time, as he understood from the Privy Council office that another petition was in, but on account of some irregularity it was unable to be sent up. That must necessarily be discussed also. It was a petition from the proprietors of the New College, Edinburgh, but the regulations had not all been complied with, and it had been returned for correction. There was a most important difference between the two petitions. The prayer to the one was that only such rules and bye-laws as relate to the admission and examination of students were to be subject to the Privy Council, whereas the prayer to the other was that all rules and bye-laws should be subject to the Privy Council.

Veterinary-Captain RAYMOND proposed that the letters be referred to the Charter Sub-committee in the ordinary way.

Mr. WILLIAM HUNTING proposed that the Solicitor be asked to prepare a reply to both petitions in time for the next meeting of Council.

The PRESIDENT said that the Solicitor asked whether there should be a special meeting to consider his reply, or whether they would wait till July.

Mr. HUNTING suggested a special meeting.

The PRESIDENT said that would be for the next occupant of the chair to consider. The correspondence between Sir Henry Simpson and Mr. Thatcher was in the hands of the Privy Council, and he supposed they would take no notice of it. It would go on the minutes.

Election of President.

Mr. FRASER proposed that Mr. Mulvey should be President of the Royal College of Veterinary Surgeons for the ensuing year. He was probably known to most of the members of Council better than he was to himself (Mr. Fraser), and therefore it would be undesirable, as well as unbecoming, for him to say much about his qualifications for the office. He was satisfied that Mr. Mulvey would occupy the position with credit to himself and to the College. He would further add that it would be a source of strength to the new President if he had a unanimous vote. The position was not an easy one, as the President knew, and strength was gained from the knowledge of possessing the sympathy of the whole Council.

Mr. TRIGGER said he had very great pleasure in seconding the nomination of Mr. Mulvey. He would have a difficult task in following a gentleman who had occupied the chair with such conspicuous ability as Colonel Lambert, but he would have the support of the Council which had hitherto been given to the occupant of the chair, and might therefore look forward to a pleasant year of office.

The PRESIDENT asked if there were any other nominations?

There being no other gentlemen nominated, Mr. Mulvey was unanimously elected President for the ensuing year.

The PRESIDENT said it only remained for him to thank the members most cordially for the assistance and the courtesy, the kindness and indulgence which had always been shown to him while occupying the chair. He had done

his best to be impartial, and had been animated with but one desire, namely, to improve his profession. He should continue to do all in his power for it in the future. He was deeply grateful for the support the members had given him during his year of office.

The PRESIDENT then vacated the chair in favour of Mr. Mulvey.

The PRESIDENT (Mr. Mulvey)—I thank you very sincerely for the very high honour you have conferred upon me. In electing me to this office I take it that you have confidence in me to carry out the business of the Council. But, gentlemen, it is impossible for me or anyone else to carry on the business of the Council without the support of every one of its members. I rely upon you for that support, and I hope you will bestow it in the same manner as you have done to my predecessors. Before I sit down I should like to ask you again to thank Colonel Lambert for the manner in which he has conducted the business during his year of office. He has had a very difficult task all through the year. There have been many subjects on which differences of opinion have arisen, and occasionally there has been what cannot be avoided in public meetings, a little bit of temper shown. Colonel Lambert has met that in the right spirit, and has carried on the business in a way which, I am sure, we can do nothing else but approve. I therefore move a very cordial vote of thanks to Colonel Lambert for his conduct as President during the past year.

The motion was carried by acclamation.

Veterinary-Colonel LAMBERT returned his sincere thanks.

The PRESIDENT said the next business was the election of six Vice-Presidents, which must take place by ballot.

Selection of Six Vice-Presidents.

The following gentlemen were nominated to fill the office :— Veterinary-Colonel Lambert, Professors Brown and Williams; Messrs. Beddard, Edgar, Peel, Rutherford, and Wragg.

Mr. MALCOLM was also nominated, but retired before the poll took place.

A ballot was then taken, and the PRESIDENT declared that Messrs. Lambert, Wragg, Brown, Williams, Beddard, and Edgar were elected Vice-Presidents for the ensuing year.

Election of Secretary and Registrar.

Mr. WRAGG moved—"That Mr. Hill be re-elected Secretary and Registrar."

Mr. J. F. SIMPSON seconded the resolution.

The PRESIDENT said, from the very efficient services rendered by Mr. Hill to the College, they could not do better than re-elect him.

The motion was carried *nem. con.*

The PRESIDENT said he had much pleasure in notifying to Mr. Hill that he had been unanimously re-elected.

Mr. A. W. HILL (Secretary) said he thanked the members most sincerely for his re-election. He wished also to thank those gentlemen forming the committees as well as the President for their valuable advice and assistance.

The PRESIDENT said it had been ruled the previous year that the Treasurer did not need to seek re-election—he was elected for life.

SPECIAL MEETING OF COUNCIL, HELD JUNE 16TH.

Mr. W. J. MULVEY, President, in the chair.

Present.—Professors Edgar and Penberthy; Veterinary-Lieutenant-Colonel Oliphant, Veterinary-Captain Raymond; Messrs. J. W. Barford, E. Beddard,

Burnett, Fraser, Hunting, Mason, Merrick, J. F. Simpson, Trigger, F. W. Wragg; Mr. Thatcher (Solicitor), Mr. A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

Moved by Mr. MASON, seconded by Mr. BARFORD, and agreed to, that the minutes of the previous meeting be taken as read.

Absentees.

The SECRETARY announced that the following gentlemen had written regretting their inability to be present :—Professor Walley, Mr. Wheatley, Mr. Taylor, Mr. Nisbett, and Mr. Kidd.

Presentation to Library.

The SECRETARY announced that the following presentations to the Library had been made—From Mr. Vaughan the fourth edition of "Strangeway's Anatomy," and a pamphlet from Veterinary-Captain Matthews.

A vote of thanks was passed to the donors.

Correspondence.

The SECRETARY read letters from the various Vice-Presidents thanking the Council for their election.

Also the following further letter from Sir Henry Simpson :

"Since I forwarded my further memorandum it has transpired that no member of the Board of Examiners now remains in the Council of the Royal College of Veterinary Surgeons. No such event has happened since the incorporation of the Royal College in 1844. A dead lock has consequently ensued in arranging the professional examinations, which it is proposed to remove by adopting the following resolution, to be moved by Mr. Hunting at a Council meeting to be held on Thursday next, June 16th :

"'That a conference of teachers, examiners, and members of Council be called to consider the arrangement of the professional examination, especially as to the number of examinations and the subjects to be examined upon.' It seems hardly necessary to point out that if the prayer of the said Royal College is granted with regard to Article 6, viz.—'That no member of Council shall be eligible to be elected as an examiner, and that no examiner shall be eligible for election as a member of Council,—that from time to time similar resolutions to that about to be moved by Mr. Hunting must be adopted to fully and fairly discuss subjects relating to the professional examinations, and that it is inexpedient therefore to grant the prayer of the petition in regard to Article 6.

"It is probable the Royal College now feel their position on this point is untenable, and it would be desirable to ascertain if they will withdraw Article 6 from the petition, or agree to a compromise proposed by me (see my memorandum of April last) that not more than one fourth of the Council shall be examiners, and that these examiners shall not take part in the election of any examiner. The Principals of all the teaching colleges in Great Britain are members of Council, and would attend the suggested conference as such.

(Signed) "HENRY SIMPSON.

"Gordon House, Windsor,
"*June 14th*, 1892."

It was agreed to defer the consideration of this letter till later in the meeting.

Examination for Fellowship Degree.

The SECRETARY read the report of the Examiners for the Fellowship degree, which stated that the following gentlemen had successfully passed

the examination for the degree, viz., Messrs. M'G. Byerley, S. F. Willows, F. W. Watchorn, W. G. Jones, Veterinary-Lieutenant T. Marriott, E. Beddard, R. Roberts, W. T. Wilson, C. W. Page, and G. Howe.

Examiners for Fellowship Degree.

The following gentlemen were re-elected as Examiners for the Fellowship degree:—Dr. Fleming, C.B., J. Roalfe Cox, Esq., and Professor Duguid.

APPOINTMENT OF COMMITTEES.

Parliamentary Committee.

Mr. HUNTING proposed that the Committee should be deleted from the list.

Mr. TRIGGER moved an amendment that the Parliamentary Committee remain as it is.

Mr. BEDDARD seconded the amendment, which was carried.

Mr. TRIGGER then moved that only three names should be added to the Committee in the places of Dr. Fleming, Mr. Malcolm, and Sir Henry Simpson.

Mr. HUNTING said he had several names to propose, viz., Professor Williams, Professor McCall, Veterinary-Lieutenant-Colonel Oliphant, Mr. Merrick, Mr. Beddard, and Mr. Hartley.

Professor PENBERTHY seconded, with the exception of the gentlemen who had never attended any committee.

The PRESIDENT said it was really not necessary that anybody should be put on. The usual way had been to move the reappointment of each committee, with the addition of the names of certain persons to serve in the place of those who retired.

Mr. HUNTING thought the number of any had never been regulated.

Professor PENBERTHY said he would therefore move that the gentlemen now members of the Council who served on the Parliamentary Committee last year be re-elected.

Mr. TRIGGER seconded the resolution.

The resolution was carried.

Mr. J. SIMPSON nominated Mr. Wragg to serve on the Committee.

The SECRETARY said the names now proposed were Mr. Wragg, Professor Williams, Professor McCall, Veterinary-Lieutenant-Colonel Oliphant, Mr. Merrick, Mr. Beddard, and Mr. Hartley.

Mr. TRIGGER moved that, the committee being already large, no further additions be made.

Mr. FRASER seconded.

Mr. HUNTING objected, on the ground that when gentlemen were nominated it was necessary to go to the ballot.

The PRESIDENT said that there had never yet been a ballot for Committees, and it would only delay the business of the Council, and serve no useful purpose. He asked Mr. Hunting to withdraw.

Mr. HUNTING then withdrew his motion, and Mr. Trigger's resolution was carried.

The Committee therefore is as follows:—Mr. Barford, Professor Brown, Mr. Cartledge, General Sir F. Fitzwygram, Mr. Mason, Professor Penberthy, Veterinary-Captain Raymond, Mr. J. Simpson, Mr. Taylor, Mr. Trigger, and Mr. Whittle.

The Charter Committee.

Mr. TRIGGER moved that the whole Council form the Charter Committee.

Mr. FRASER seconded the resolution, which was carried.

General Purposes Committee.

The PRESIDENT said there was a long list of names on this Committee, but there were several gentlemen who had retired.

Mr. TRIGGER suggested that the Committee should be appointed *de novo.*

Various nominations were then sent in, and the committee was appointed, viz.—Mr. Barford, Professor Edgar, General Sir F. Fitzwygram, Mr. Fraser, Mr. Hunting, Professor Penberthy, Veterinary-Captain Raymond, Mr. Simpson, Mr. Wheatley, Mr. Merrick, Mr. Wragg, Mr. Trigger, Veterinary-Lieutenant-Colonel Oliphant, and Mr. Beddard.

Registration Committee.

This committee was appointed as follows:—Mr. Fraser, Mr. Hunting, Mr. Mason, Professor Penberthy, Vet.-Capt. Raymond, Mr. Simpson, Mr. Trigger, Mr. Wheatley, Mr. Wragg, Mr. Merrick, Mr. Beddard, and Veterinary-Lieutenant-Colonel Oliphant.

Examination Committee.

This committee was appointed to embrace the whole Council.

Bye-laws Committee.

Mr. MASON having given in certain nominations,

Mr. SIMPSON asked if the committee was not appointed because there was a general revision of the bye-laws of the College under contemplation?

The PRESIDENT said that was the object.

Mr. SIMPSON thought that the duties devolving upon the members of this committee might be merged into the General Purposes Committee.

Professor EDGAR then proposed that the committee should be deleted.

Mr. FRASER seconded the resolution, which was carried.

Finance Committee.

This committee was appointed as follows:—Mr. Fraser, Mr. Wragg, Mr. Simpson, Mr. Beddard, Mr. Hartley, Mr. Barford, Mr. Hunting, Professor Penberthy, Mr. Trigger, Veterinary-Captain Raymond, and Mr. Burnett.

Library and Museum Committee.

This committee was appointed as follows:—Mr. Burnett, Professor Edgar, Mr. Kidd, Professor Penberthy, Veterinary-Captain Raymond, Mr. J. Simpson, Mr. Hunting, Mr. Mason, and General Sir F. Fitzwygram.

Foreign and Colonial Schools Committee.

Mr. HUNTING proposed the deletion of this committee.

Mr. BARFORD seconded the resolution.

The proposition was carried.

Dinner Committee.

Mr. HUNTING proposed the deletion of this committee.

Professor EDGAR seconded the motion.

The PRESIDENT said his idea was to appoint a Dinner Committee at the meeting of Council immediately before the annual meeting.

The resolution was carried.

(To be continued.)

THE CENTRAL VETERINARY MEDICAL SOCIETY.

THIS Society held its usual monthly meeting on June 2nd, at the Royal College of Veterinary Surgeons, Mr. W. Roots, the President, occupying the chair. The Fellows present were Messrs. W. F. Barrett, A. L. Butters, M. Clarke, H. W. Caton, A. E. Gosling, W. Hunting, J. S. Hurndall, F. C. Mahon, W. Roots, H. G. Rogers, Prof. Shave, Prof. Smith, S. Villar, F. Samson, W. N. Wright, F. W. Wragg, and F. W. Willett. Visitors: F. H. Bembury and G. C. Lowe.

Professor WALLEY wrote: "You and the other Fellows will remember that when I read a paper at your Society last year on 'Foreign Bodies,' I begged your attention to a case in which I found a putrid clot in the heart. Another similar case cropped up some time ago and I forwarded the clot to Professor Brown and asked him to request Professor Shave to show it at one of your meetings, and he will probably do so."

Pathological Specimens.

Mr. F. WRAGG (exhibiting a specimen which was passed round) said: This is a portion of the colon and a piece of the mesentery from the single colon. The history of the case is that the horse was very subject to colic, and yesterday morning he was taken with a very severe colic and died. The immediate cause of death was rupture of the stomach and severe gastritis or inflammation over the whole intestinal tract; and, when I made the *post-mortem* examination I found this piece of mesentery attached to the floating colon and to the double colon. I thought that, as the subject which is to be discussed to-night was bowel disease, you might be interested in seeing this specimen.

Professor SHAVE (showing specimen) remarked: The specimen on the table was sent me by Professor Walley in consequence of some remark which I made when he read a paper on "Foreign Bodies in connection with Pericarditis." The paper was entitled, I think, "It is only a pin." I will just read what Professor Walley, writing to Professor Brown, says: "My main reason for sending this specimen to you is this: At a meeting of the Central Veterinary Medical Society, during the discussion on the paper of mine on 'Foreign Bodies,' one of your colleagues—Professor Shave—seemed to me to doubt a statement I had made in the paper to the effect that I had on one occasion found a putrid cardiac clot. Now, I shall feel obliged if you will show this clot to Professor Shave and ask him to do me the justice to exhibit it at the next meeting of the Central Veterinary Medical Society." That is the heart and that is the clot (referring to specimen on table) which Professor Walley says is a putrid clot. I believe that the remark I made in connection with the subject was that I simply asked Professor Walley how long after death he made his examination.

Professor F. SMITH, Army Vet. School, Aldershot, gave the following address on

"INTESTINAL OBSTRUCTION IN THE HORSE."

Intestinal obstruction may be defined as an interference with or a total suppression of the excretion of fæces. It may be present as a disease or as a symptom. As a disease when the bowel contains a quantity of undigested food, calculi, etc. As a symptom in twist of either large or small bowel. Our chief diagnostic difficulty lies in determining whether it be a disease or a symptom. In considering intestinal obstructions it is impossible to separate the above totally different conditions.

Causes.

Indigestion arising from defective teeth; crib-biting; large quantities of oats and chaff; errors in feeding, such as horses thrown out of work not receiving a reduced corn ration; intestinal contents too dry.

Foreign Substances in the intestinal canal, such as gravel, calculi, hardened fæces acting the part of a foreign body. Opium given to delay intestinal pain a probable factor. Displacements of the bowel, twists of large or small intestine acting mechanically or not.

Symptoms.

Nothing in the first instance to distinguish it from ordinary colic; some short time must of necessity elapse before the dimished or total cessation of fæcal excretion can be determined. The absence of excretion may be due to impaction of the bowels or displacements of the same. This divides intestinal obstruction into two well-marked varieties, viz., 1. Acute obstruction, due to twists and such like. 2. Sub-acute, due to impaction with fæces or foreign bodies.

Acute Intestinal Obstruction may be determined by the character of the pain (though not always). The pain is generally acute, persistent, and the disease runs a rapid course. Twelve hours, certainly twenty-four, sees them well at death's door. The rapidity of death depends entirely upon whether the blood supply to the bowel is partly or completely cut off, viz., a partial or complete twist.

Sub-acute Obstruction is attended by dull continuous pain, character of pulse alters, slower than in the acute form, and death may not occur for three or four days.

We are often wisest after the event. If a case lives beyond the second day, for all practical purposes we may be certain it is not a twist. Further symptoms of obstruction, whether acute or sub-acute, are straining, often violently, when the hand is introduced into the rectum, passage of mucus, probably small quantity of highly fœtid fæces removed, thickly coated with mucus, which change indicates that the material has been lying in the bowel for some days. There may be abdominal distension or not; pulse altered early, pulse a most reliable symptom in all bowel cases, a careful examination of it will always give us the earliest warning of a serious case, anything over 50 unsatisfactory, as case progresses runs up to 70 and 80, becoming very small. Pulse so reliable that in the dark we may know how a case is progressing. Temperature of no value, respirations of very little.

Rectal exploration essential, note condition and position of bowel, and nature of contents of bowel not so distended with gas that they can be felt. More than one examination necessary.

Exceptional for a horse to drink water when suffering from bowel disease. Cause not clear; most unfortunate that it should be so, for the water might act mechanically.

Diagnosis.

Early information as to the state of the bowels in every colic case, have fæces kept and examined: if necessary, washed when gravel or sand is suspected. No horse doing well with colic unless the bowels acting. A horse passes, on an average, 12 motions in 24 hours, weighing on an average diet 25lbs. A man passes one motion daily, often not that. This explains why equine bowel obstruction runs such a rapid course; every day a horse goes without passing dung is equivalent to a man going twelve days. Our cases, therefore, give us but little time for consideration, and run with astonishing rapidity to a fatal termination. Hence all the more reason for energetic interference, and never trusting to matters righting themselves.

Cause of Death.

Bowel obstruction; probably in part poisoning. Horses take in with their food and manufacture in the body phenol, what is excreted by the kidneys with potassium, and it is possible that the iron eliminating from this process may assist in hastening the death process.

Several forms of death convulsions make impressions on the nervous system; it is not correct to describe these cases as dying in great agony, any more than it is to say a man in a fit, struggling violently, with distortion of the features, is in pain. The method of death in horses terminates generally in convulsions. Why not so in the human subject?

Post-mortem Examination. In cases of acute obstruction, viz.: bowel displacement, any conceivable and inconceivable form of twist may occur, small or large bowels. To Professor Walley we are indebted for first drawing attention to displacements of the large bowel, previously unheard of. Sometimes small twists occur, difficult to find, or rather difficult to isolate in the body, readily seen when bowels removed, twist by this time undone or ligature divided in such cases often described as enteritis, term incorrect. Enteritis is a rare disease, displacements and twists only too common—more careful *post-mortem examinations* required, all who do so will be convinced of the truth of the statement.

In cases of such acute obstruction contents of bowel often hard, dry, caked to membrane, and giving the impression that not all the medicine in the pharmacopœia could have helped it along; at other times masses of fæces found in the colon in the form of balls—calculi may be present, or sand gravel, &c., in sufficient quantities to act mechanically.

The dry contents of the bowel may be the cause of the disease or the result, for these horses drink but little fluid, and therefore absorption from the intestinal canal may occur during the attack.

Treatment.

Treatment comprises medical and surgical. In every case the former first. Gamgee struck the key-note in the treatment of colic, in advising the early administration of aloes. I regard it as a golden rule. He neutralised this great idea by using opium to allay the pain. Opium on the horse acts as a powerful cerebral stimulant, excites to such an extent as to simulate abdominal pain, round and round the box, pawing, scraping, &c. All these symptoms can be produced in healthy horses. Further, it locks up the bowels, and closes the kidneys; it is possible to almost suspend the secretion of urine, and the bowels may be entirely closed by its aid. Have not used opium for years, and have never regretted it. It is no use giving aloes with one hand and opium with the other.

As it is impossible, in the first instance, to say what a bowel case is going to terminate in, I believe it to be a safe and sound rule to give every case of violent colic aloes immediately, in order to save time; any moderate or slight case to receive aloes in one hour, if not out of pain. The best anodyne for the horse is Indian hemp or chloral hydrate. The action of hot rugs on the abdomen is sometimes marvellous. The action of oil is uncertain, I still use it, though I doubt its value. I use it principally for its mechanical properties, though I am bound to confess that this explanation will not stand the test of physiological enquiry. Physostigmin and pilocarpin are drugs of the highest value, their action quite clear though not commonly understood. The former stimulates the involuntary muscle of the bowels, producing the most remarkable rumblings and contractions; the latter acts on the salivary and allied glands, such as the pancreas, pouring out quarts of saliva and pancreatic fluid, which act mechanically and chemically—normal colon alkaline, often in colic

acid, sometimes of pancreas, neutralises this. Where these drugs have given unsatisfactory results, it is due either to age or dose too small. Physostigmin 3 grs., pilocarpin 2 grs., will not disappoint. The 10 min. doses of a solution of physostigmin of 1 gr. in 160 will obviously not be of the slightest use, and I learn that 10 min. doses are those generally given by people who say that physostigmin has no action on the bowels of the horse. I hold it to be one of the most valued drugs we have, and considering the length of time generally occupied in purging a horse, a period of vital importance in the treatment of a case of obstruction, I regard the man who introduced physostigmin into veterinary practice in the light of a veterinary Jenner.

Our cases of obstruction require to be attacked from both ends of the digestive canal, mouth, and rectum—the latter of the greatest possible importance. The use of the long rectum tube of immense value, no danger in its use, naturally requires care, so does any other operation of equal delicacy. To pass it coat it slightly with lard, patience now only required, never force it, must find its own way, keep on dilating the bowel in front of it by pumping in water—no difficulty, I believe, in washing out the colon by means of this tube, and in gravel and sand colic it is of the greatest value. If tube not at hand use a rubber pipe. In rectal exploration gently kneading the bowels, if they admit of it, may be found useful. It is seldom that this method can be adopted, though I think I have employed it with advantage.

Washing out the stomach found to be excellent treatment in human practice, how it relieves intestinal obstruction far from clear. If we could make horses vomit how many lives we would save! Obstruction to vomiting is contraction of the cardia, instrument shown for mechanically dilating the cardia by the introduction of a rubber bag fixed to a tube and inflated by means of a pump. Trials so far satisfactory, extended as required, brought forward not as a well-established remedy, but as one likely to be of great importance in the future.

Surgical Treatment.—Very little at present done in the direction of opening the abdominal cavity and reaching for the obstruction; the cases most likely to be benefitted are those due to simple ligature of the bowel, calculi, hardened fæces, sand and gravel. The wonderful records in human surgery should stimulate us in this direction. We can but hasten inevitable death, we may do good. Difficulties in dealing with such an enormous cavity as the abdomen of the horse not to be disguised. Left flank the most favourable seat for operation, external wound to be lower than the peritoneal wound, so as to avoid products draining into cavity; length of incision to be the breadth of the hand at least; skewers required for abdominal wound. Have operated on four cases, all terminating fatally—obstruction in one only of these reached, but surgical relief too late. Confidently expect success in the future, when the best methods of avoiding the difficulties and dangers of abdominal section in the horse are learned. In the meantime, we have the satisfaction of knowing that, in well-selected cases, we cannot increase the mortality from intestinal obstruction by having recourse to surgical interference.

Discussion.

Mr. W. HUNTING, in opening the discussion, said that Professor Smith had covered such an extensive ground, that it was very difficult to enter into a discussion upon it without one confined himself to one or two points. The difficulty with which he (Mr. Hunting) had to contend was the shortness of the time he had had to think over the points of Professor Smith's address, and, therefore, should content himself with running over his few notes upon the Professor's lecture. First, Professor Smith referred to the displacement which occurred of the large and small intestines in certain curious cases. Now, it would be an extremely useful thing to them if they could always diagnose

these displacements, and ascertain whether they had or had not practically displacement of the bowel, stopping its movements and the passage of food from it; but he was inclined to think they could not. It would also be extremely useful for them to know how these displacements occurred. One could quite understand how the colon got a twist, a half twist, or a whole twist upon itself in the same way that a cow got a twist by rolling, but he could not understand how twists of the small intestines occurred. No amount of rolling seemed to have the slightest effect in producing these; that was to say, horses, healthy or diseased, rolled as much as they liked, and no twist appeared. Another time, a horse came in from work, and during the time it was at work and afterwards, it was under observation, and yet, on examination, it was found to have a twisted small intestine. He put aside at once that these were not twists. He knew that it was said twists of the small intestine were not twists at all; that was in cases where they found no rupture of the mesentery. It making post-mortem examinations, he had tried in vain to find out how a twist had occurred. There was something, a kink or knot at one part or another, there was a portion of intestine, six or eight feet long, purple. He knew no other way, except a twist, which would account for the blood-stained appearance of the gut, and he could not comprehend how they got mixed up—those difficult coils of intestine. If they knew how that occurred, they might probably help to prevent them. Amongst the causes of intestinal disease, Professor Smith mentioned indigestion. He (Mr. Hunting) would just add one remark to that. No doubt indigestion did occur. Perhaps the most common case was that of the working horse, which, when tired, was allowed to gorge itself with food, no matter whether such food was of a digestible or indigestible nature. That was the most common cause of indigestion. He said "when the horse was tired" for this reason; that if a horse was muscularly tired, not only were its voluntary muscles weak and flaccid, but the involuntary muscles were in the same condition. Hence they had in a horse a fatigue of the muscles of the stomach and bowel similar to that of the limbs; and the stomach and intestines were thus in an unfit condition to act properly upon the food entering them. As to symptoms of intestinal disease, he believed that there was a rough set of symptoms which were indicative of certain definite conditions. He was inclined to think that Professor Smith was really correct in saying that very acute pain meant that they had some mechanical twist as the cause; and that in the sub-acute cases, they had general impaction of food, without any mechanical twist or displacement of bowel. Particularly in those cases of overloaded colon did they have them hanging on for three or four days with sub-acute pain, very seldom free from pain, very seldom with any marked pain. At any rate, those characteristic conditions he generally regarded as a sign of impacted colon, whereas the acute violent pain was either, they would find the worst form of twist of the small intestine, or, it might be, what they ordinarily called colic. What they usually termed "colic" was an exceedingly painful temporary condition; and the pulse looked as though it negatived the seriousness of an inflammation. If a horse's pulse kept down to 45, he was not without hope than an ordinary stimulant and anti-spasmodic mixture would put the animal right; and, in this he was not, as a rule, disappointed. If that did not act, he always resorted to a dose of physic; and he believed that every case of intestinal disease in a horse was accompanied, if not caused, by impaction of food in the intestines; and that if that impaction were allowed to remain there, it would probably kill the animal. Hence he invariably administered a dose of physic. The question was repeatedly argued whether it was right in a case of colic, called "spasmodic colic," to give an irritant-like physic or to attempt first to allay the pain by anti-spasmodic sedatives. Further, it was argued that in the human subject they administered sedatives with the intention of alleviating

the pain and when they had once stopped the spasm there was no fear of impaction; after the spasm was got rid of, that then the normal condition of the bowels would be resumed and the indigestion pass away. Personally he believed, so far as the horse was concerned, that that was arguing upside down. He held that the impacted food was the cause of the spasm or the pain, and that the proper thing was to remove the cause even if they inflicted a little more pain. Therefore, he gave first of all a stimulant, which might perhaps meet the condition to which he had referred, of fatigue of the muscles and indigestion, and he followed up that with a dose of physic with the idea of removing the obstructing cause—the indigestible food. But it was very difficult to meet this argument: A man said "I do not pursue your method, but exactly the opposite course, and my cases recover as quickly and as well as yours." There was, in fact, no meeting that argument at all. It was impossible for one man to compare his cases with another man's unless he saw them. Unless he did this no comparison could be drawn. The other man was always right. Personally one might stretch a point and not always tell the truth, but the other man always did. One listened to what the other man said and could not contradict him. The only thing to do was to compare the two different kinds of practice in their own individual experience. He had had the advantage in his own practice and in other people's practice—in his father's practice particularly—of seeing both kinds of treatment, and he thought he might say, fairly and honestly, that he had had a greater number of recoveries under the stimulant and aperient treatment than under the sedative treatment alone. With regard to diagnoses and aids to diagnosis he believed that a rectal examination helped one a good deal. At any rate, if he examined a case of abdominal pain from the rectum and found a horse strained very much and the intestines extremely hot, but did not find a large amount of food in the intestines, his belief was that in those cases either they had to deal with a twist of the small intestine or inflammation of the large intestine. At all events he regarded such cases as serious; and in most of them they would find that death was the result. Also, they would find that if they used an injection and did not use large quantities of water, that the horse which rapidly ejected an injection was a bad case and usually died. On the other hand a horse that retained a quart or two of water in the rectum for some considerable time was, as a rule, a curable case. He offered no explanation of this, except he thought, as Professor Smith suggested, that whenever one part of the bowel was affected the whole of it became irritable and seriously affected. If they examined the rectum they would discover when the large intestines were overloaded, and when they discovered that and there were no other symptoms to suggest the presence of a foreign body or twist, then they were perfectly justified in administering a dose of physic with a view of removing the mass collected there.

Speaking of adhesive attachments of one part of the bowels to another, he said he did not think that those old adhesions had much to do with the production of colic; but that opinion was based upon very slender evidence. He remembered that in the case of a pony which he opened—and which had not suffered from illness for years before—he found every abdominal organ glued to the other, except the small intestine. It had been the victim at some time of peritonitis, and the adhesions were so hard at the time of the post-mortem examination, that he could not free the one intestine from the other. All the parietes were stuck to the intestines, and he had to dissect the wall of the abdomen away from the intestines before he could get them out. The pony had done its work four or five years before as though nothing was wrong with it. A very interesting question, one which they knew nothing about and into which he need not enter, was as to the cause of death. It had often puzzled him why a horse died within twelve hours as the result of a twist—if there

were such things—of the small intestine. If they cut out six feet of small intestine by abdominal surgery, the animal would not die in the time, it would not kill it in six, eight or twelve hours; but if the horse got this part strangulated, mortification commenced and the horse was almost pulseless; if these symptoms continued five or six hours the horse would not live. What killed it? It was not the stoppage of anything passing through the bowels. They could not tell what it was, unless it was, as Professor Smith suggested, some blood-poisoning arising from changes going on in the part.

As to the treatment of these cases he knew nothing about physostognim, neither did he use Indian hemp. He had said all he had to say about aloes. Opium he had not used for years, neither had he employed the long enema tube, nor did he intend to use that instrument until he knew there was no danger of killing the animal by its use. He would not attempt to wash out the stomach of a horse until Professor Smith had perfected his instrument. He believed that it was not often that the food in the stomach, or seat of the stomach, was the cause of colic or abdominal pain. When they had very much food in the stomach they generally had some cerebral symptoms of a different nature to those connected with abdominal pain or colic. He must say that he had only seen morphia used largely in one case, and then not by himself. In that case they had the symptoms as the result of morphia which Professor Smith had described: the horse walked round and round the box and sometimes stood with its head under the manger. The symptoms struck him as being due to the morphia and not to the colic. To some practitioners and believers in therapeutics that suggested a new departure, because if *similia similibus curantur* were the principle they adopted in their treatment, morphia would be the very thing to give in those cases of impacted stomach, especially if they had any cerebral symptoms.

Mr. F. W. WRAGG said that he, too, had taken a note or two during Professor Smith's address, and to those notes he would refer briefly. The first thing which struck him in the Professor's most interesting address, was the statement that the twist occurred through the horse rolling. Now he opined that twist never happened through a horse rolling, but what the precise cause was he was not prepared to say. He had known many cases of twist where the animal had never had an opportunity of lying down at all, and he was quite satisfied that twist was not the result of rolling. When a horse was turned out into a grass field, nature invariably prompted it to lie down and have a roll, and most horses when they had performed a journey lay down in their boxes and rolled; and he had never seen a case of twist as the result of this. In his opinion nature had made the belly large enough just to hold the intestines, and it was impossible for the twist to occur through rolling—it must be caused by disease. Was it possible for the twist to take place through the inherent contraction of the muscular coat through spasms? Then Professor Smith said that a twist would terminate fatally in a very short time. Well, he had known many cases of twist to last as long as forty-eight hours. He attributed that in his own experience largely to the quantity of hydrate of chloral he had administered which prevented the inflammatory action taking place, or rather it retarded the inflammatory action. As regarded diagnosing the difference between a twist of the small and of the large intestines, he invariably found in a twist of the large intestine they got tympanitis. Colic in his view was invariably the consequence of impacted colon, and, having that opinion, he always started his treatment with a dose of physic. That had been his practice ever since he had anything to do with the profession. That, he was quite satisfied, was the proper treatment to adopt. As to the long enema tube invented by Professor Smith, Mr. Wragg said he used it on the occasion of the National Veterinary meeting at Peterborough five years ago, and since. Professor Smith spoke of the difficulty of passing the

tube up and added that he covered it with lard. Well, he used soap, and when he found he could not get the tube any further he started the pump, which dilated the bowels, and then he passed it up again and dilated the bowel by means of a little water, and then the tube passed up very easily. He thought it was a great advantage to use this pump and to employ it directly they were called to a case of colic. Then Professor Smith said that by the rectum he could diagnose whether or not there was impaction. Well, he thought he was rather stupid when he got his hand in a horse's rectum, for he then hardly knew what he could feel exactly. This was, perhaps, due to his stupidity. He had heard some people say that in these circumstances they could feel the spleen and enlarged liver, but he could not. Professor Smith placed great reliance upon the pulse in cases of twist, but he had known in such cases the pulse to keep at 45 and under for twenty-four hours. He should like to know from the Professor of what class of horse he spoke when he gave the number and weight of the droppings. He might add in corroboration of his theory that twist was not the result of rolling; that he had occasion a short time ago to get out some statistics as to the number of cases of colic which one firm had. Their horses were invariably put in a loose box, no matter how violent they were, and allowed to roll. Well, out of 327 cases which came to his infirmary in the course of two years, five died; two from calculi and three from twist. When he got a case of twisted bowel he could almost always trace this to the fact that the horse was worked for some time after it had been seized with colic symptoms.

Mr. S. VILLAR said that Professor Smith had introduced so interesting a subject and treated it in so masterly a manner, that he should like to have seen the Professor's address in print, and to have had an opportunity of studying it before venturing to make any remarks upon it. He noticed that at an early part of his address Professor Smith said that the majority of cases of intestinal obstructions were due to errors in feeding, that was where there was anything like a twist, and he mentioned that it occurred in India through giving the horses gravel in their food. Professor Smith did not, however, say anything about errors in drink, but it occurred to him that many cases of colic arose from the habit of drinking heavily when the horse came in from hard work; and further, he believed that the kind of water they imbibed had a good deal to do with it. He knew of an instance where a man had seven glandered horses which were allowed their water from a trough or tub. The groom thought he would disinfect the trough and deposited two stone of lime into the water. The next day two out of the remaining horses were affected with colic and both died from the effects of obstruction. He traced that, in his opinion, to the fact of the man having given the horses lime water to drink. Another case came to his mind of an obstinate obstruction of the bowels in a horse fed with bran. He remembered examining it per rectum, and found the colon distended with bran. The horse took a considerable time to recover. Professor Smith spoke of a pony rolling and twisting its bowel, and he (Mr. Villar) thought that the liability to twist was greater from this cause on the stones in towns than upon the ground in the country. Ponies in the country were allowed to roll about as they liked. Mr. Wragg had seen horses tied up which had never been down and yet they died of twisted bowel or enteritis. Professor Smith mentioned the stimulating effect of opium. In cattle, say for a cow, there was no more powerful stimulant than an ounce of tincture of opium.

On the motion of Mr. F. G. SAMSON, seconded by Mr. H. W. CATON, the further discussion of Professsor Smith's address was deferred to another meeting of the Society.

Nominations.

Mr. G. C. LOWE, of Dockhead, was nominated a Fellow of the Society.

Anatomical Prize.

The CHAIRMAN announced that the judges had decided in favour of the anatomical specimen sent in by a gentleman who gave the *nom de plume* of "Scalpel" and who proved to be Mr. T. Roberts Mulcahy, Tipperary, New Veterinary College, Leith Walk, Edinburgh.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A MEETING of this Association was held at the Queen's Hotel, Cheltenham, on May 10th. Mr. F. W. Barling (of Ross), the newly elected President, occupied the chair, and there were also present Professor Pritchard and Messrs. Malcolm, Stanley, J. Gibson, and Blakeway, Birmingham; W. Hunting, London; Weighill, Gloucester; Stanley, Carless, Perrins, Worcester; Huband, Cheltenham; Coe, Stoke-on-Trent; Gooch, Stamford; Carless, Stafford; West, Newent; Jones, Leicester; Wragg, London; H. Collett and Dr. Manley, West Bromwich; T. H. Merrick, Northampton; Olver, Tamworth; Wartnaby, Burton-on-Trent; Smith, Tunstall; Trigger, Newcastle-under-Lyme. Visitors: Messrs. Wooler, Taylor, Evans and others.

Letters of apology were received from Professors Walley, McCall, Penberthy, McFadyean, Sir H. Simpson, Dr. Fleming, Messrs. Blunt, Green, Baneth, Horten, Freer, Parker, Price and others.

After luncheon, at which the members were hospitably entertained by the President, the company adjourned for the transaction of the business on the agenda. The following gentlemen were elected:—Mr. John Thompson, of Coventry; Mr. T. Huband, of Cheltenham, and Mr. Prickett, of Coventry.

Honorary Associate.

Mr. TRIGGER proposed that Professor McCall be made an honorary associate of the Association. Professor McCall, he remarked, recently favoured them at Birmingham with an interesting paper, and they would be adding to their dignity as a society by placing his name on the list of associates.

Mr. OLVER, in seconding the motion, said that no one was more worthy than Professor McCall, of the honour which it was proposed to bestow.

The motion was carried unanimously.

Two Meetings to be Held in Birmingham.

In accordance with notice, Mr. TRIGGER moved "that two of the meetings in every year should be held in Birmingham." This proposition, he ventured to think, would commend itself to the meeting, because there was very little argument against it. A year or two ago, it was his privilege to move that the annual meetings of this association should be held in Birmingham, and this arrangement had proved most successful. They never got meetings anywhere like those they had in Birmingham, and the small gathering of that day was an illustration of the effect of getting off the main line. It would be desirable to arrange permanently for the holding of a second meeting—the August meeting—in the metropolis of the midlands. He believed the secretary could give them figures which would be far more eloquent than anything that could be said on the subject. What they wanted at their meetings was a good attendance. He did not know that this resolution went far enough; he thought the day would come when they would hold all their meetings at Birmingham, but for the present he contented himself with moving the resolution which was placed on the agenda.

Mr. JOHN BLAKEWAY seconded, observing that the advantages of Birmingham as a place of meeting were well known to all of them.

Mr. H. J. DAWES, hon. sec., remarked that they always had double the number of members at Birmingham than at meetings held anywhere else. This was a certain proof of the advantages of Birmingham.

Mr. GOOCH suggested that the annual meeting being fixed for Friday, it would be convenient to fix the second Birmingham meeting for Tuesday.

After a brief discussion, Mr. Trigger's motion was agreed to, and it was decided that the August meetings at Birmingham be held on Tuesdays.

The Central Veterinary Society.

The Secretary read a letter from the Central Veterinary Medical Society, and it was decided that the letter be placed on the agenda for the next meeting.

The Presidential address was as follows:

Gentlemen,—It is my first duty to thank you, the members of the Midland Counties Veterinary Medical Society, for the honour you have conferred upon me by electing me your president for the ensuing year. I assure you I consider it a great compliment, at the same time, I cannot but feel the responsibility of the post. It will be my first endeavour to carry out the duties of the chair to the best of my ability, and by that means to try and deserve the confidence placed in me.

The delivery of inaugural addresses by the presidents of societies, is now so frequent, that it is difficult to say anything new, or even to throw a new light upon anything old. The result must be that most of us quiet practitioners, when given the honour of presidentship, can add little to the general store of knowledge. Fortunately, there is one thing we can do, that is, we can draw fresh attention to subjects of interest, and we can touch upon any matters of special importance, without being expected to treat them very deeply or very scientifically.

I propose to-day not to trouble you with any scientific subjects, but just to ask your attention to a few questions of professional importance which are now to the front.

The Late Election.

We have just had one of the most important annual elections of members of Council that I remember. The election has turned solely upon one question—the proposed New Charter, and every successful candidate has been one of the gentlemen pledged to support it, to the best of his ability. The election has shown not only the wide interest taken in the question, but the unanimity of the members in favour of all the clauses of the Charter. We, as a society, may congratulate ourselves upon the great success of the gentleman nominated as a representative of the Midlands, and I may congratulate Mr. T. H. Merrick upon the very large number of votes he secured. At a juncture like this, when an all absorbing question is before us, it is right and proper to put aside less urgent matters, and to concentrate our energies in returning members to Council who may be relied on to do our mandate. I cannot but recognise that there is just one danger in this course, namely, that we may, by so doing, rather narrow the calibre of our Council. I do not for one moment say that our present Council is not as experienced, as intellectual, and as earnest as any previous Council, but I venture to think that it will be well when we can select our representatives upon a wider basis. I hope, therefore, that the proposed New Charter may soon be granted, and that we can then get on to other work which requires to be done.

When that time arrives, we shall require our candidates to give us more information as to their views, than merely a short note to say they are in favour of the Charter.

The Charter.

I need say very little about this, as you all know its clauses. If it be granted, every member will have the right to a seat on the Council, if the profession think him worthy of it. Every member will be elected directly by the profession, and the Council will lose the privilege of electing six vice-presidents every year, who have not been approved by the whole body of electors. No examiner will be able to hold office as a member of Council. The matriculation examination will be entirely in the hands of the body corporate. The annual meeting will be held on the first Wednesday in June, instead of the first Monday in May, which will be a much more convenient date for country practitioners. I cannot see anything in these changes to call for objection; in fact, I think we might well have asked for more. I see no reason for leaving the examinerships entirely in the hands of the Fellows, and I think powers might have been asked to arrange for a compulsory pupilage. Moderate as the Charter is, there is a strong opposition to it. Strong, not in numbers, but in energy. I very much regret this opposition, but I hope that the Fellows who have allowed their names to be used, may now see how the weight of the profession is against them, and how graceful an act it would be for them to withdraw their opposition, and yield to the wishes of the majority. Sir Henry Simpson, who alone has taken a prominent part in active opposition to the Charter, is quite within his right, but I cannot approve the methods he has adopted, more especially his action in endeavouring to excite the registered practitioner against the profession. As one of the members of the Royal College of Veterinary Surgeons, I approve the Act of 1881, and accept the position given by it to all existing practitioners. I have no desire to deprive them of any rights, and I do not believe any members of our body differ from me. I sincerely hope that Sir Henry Simpson will cease this opposition, and again resume his place as a leading member of the profession, and assist us with the further reforms we are looking forward to.

The Matriculation Examination.

The Council has recently adopted the suggestion of one of its committees to raise the entrance examination for students to the same level as that required in the medical profession. This is a step in the right direction, and we must all approve the advance. In these days education is so general that every boy of sixteen who possesses ordinary intelligence is capable of entering the veterinary profession. Our scientific training requires more than ordinary intelligence and scholastic knowledge to enable students to grasp it properly, and we shall not hold our proper position unless we take means to keep out of our ranks all inferior men. A good liberal education is necessary for our students to understand the sciences they are now taught, and besides that a good education is the best passport our graduates can have to a higher social position.

The Duration of Studies.

A very important question is now before the Council, and the general practitioner should give it his earnest attention. It is this, can a student learn all that is necessary in the present three years course of study? The Council has apparently arrived at the conclusion that he cannot, and they have approved the principle of having four years devoted to College studies.

If we consider it necessary to increase the subjects taught, it is certain that a four years course of study is required. On the other side it is argued that we should not increase the number of subjects, but insist that those now taught should be more thoroughly mastered. Even this may require more time, and our teachers should say if they think the present time is sufficient for a student to learn the various sciences which are necessary for him to know.

It is a difficult question for practitioners to answer. The corporate body cannot compel the schools to alter their curriculum to suits views, except by the number and form of examinations it may impose. I feel sure no one would desire a conflict between the schools and the Council, so that we must not do anything which is in direct opposition to the experience of the schools. No doubt it is desirable that our graduates should be as well taught as possible, but it is a question whether the time has arrived for such an advance as is required by a four years course of study. I incline to think that when we have raised the educational standard of students entering the College, we may expect greater results from the present three years course, and that we must not undertake a change which will add greatly to the expense of veterinary education, until we have made the best of the present three terms of study. In saying this, I do not wish to object to progress, but I do wish to ask our representatives if they are quite sure our present period of study is not as long as is necessary for the average man to learn the principles of his profession. We certainly want our graduates to be well educated, but we do not want them to be book-worms.

Compulsory Pupilage.

I think every practitioner will agree with me, that even the best College must fail to teach students all the practical knowledge they should have before being licensed to practice. Colleges cannot show the students several cases we see in practice. Veterinary obstetrics can never be learned in a town. Castration and spraying are operations only seen in the country, but every graduate should have some acquaintance with them. Then there are the important matters of tact, manipulation of animals, acquaintance with the habits and ways of animals, and the daily routine of practice which are almost as necessary as scientific training. All these I venture to say can only be learned in practice, and I believe that a pupilage is as necessary as a College training to make a man worthy of a diploma.

If pupilage is so necessary why should it not be made compulsory? We compel a student to learn science, and we should also compel him to see practice before permitting him to have a diploma which says he is fit to practise. I ask the practitioners around me if it is fair to tell the public they may entrust their stock to a man who has not seen the common cases we all meet in practice, but which are not available at any college? I hold that practice should accompany theory, and that a compulsory pupilage can alone supply the knowledge required. I do not mind whether the practice is seen before or after going to College, but it should be seen before the diploma is given.

If we cannot have a compulsory pupilage, there is one advantage that will be attainable under a four years course of study—viz., that students will then have three summer vacations in which they may see practice, and I think some rule might be enforced regarding the way in which the summer term is to be passed.

Professional Conduct.

In the *Veterinary Record* for April 16th is a very able paper read by Professor Penberthy before the Central Veterinary Medical Society upon this subject. It is well worthy of the consideration of this Association and even of our Council. There is one offence mentioned which is almost certain to increase as we prevent men practising under false titles. We are now stopping unlicenced persons from practising under the title of Veterinary Surgeons, and it is quite possible that some unqualified men will arrange with qualified men to protect them or "cover" them. We must take care that the offence of "covering" shall be one punishable by removal from our register. It is no use proving our sole right to a title if we permit men without a title disguising

their condition under the protection of any man who has a title, but who has not the honesty to resist selling it. We must take care that unqualified men are not "covered" by qualified men either as partners or assistants. Then there is another offensive practice—Advertising—which I particularly wish to call your attention to. In my opinion nothing lowers us more in the eyes of other professions than the advertisements issued by some of our members. For this practice solicitors, medical men, and stock brokers would be struck off the rolls of their calling. What can they think of us when they see some of the advertisements issued by members of the College? The circulars and cards issued by young men just starting practice, or by older men who have changed their address may be excused, but the grosser forms of advertising constantly adopted by some men of standing are quite inexcusable. If we desire to hold the position of professional men we must not adopt the ways of retail tradesmen. When we enter a body protected by a Royal Charter, and granted privileges denied to other men, we must recognise that our privileges require the acknowledgment of duties somewhat higher than mere success in trade. If we assume professional standing we must act up to it or our assumption becomes a pretence. I hope the Council will carefully consider how to punish offences against professional conduct. Of course no laws can make us all gentlemen, but laws can prevent the grosser offences which our Act of Parliament calls "conduct disgraceful in a professional sense."

Exemption from Juries.

All the callings which are described as "professional" have managed to obtain exemption from serving on juries; all except the veterinary surgeon.

It is all very patriotic and heroic to say that every man should be proud to serve his country by acting as a juryman, and it is undoubtedly true that trial by jury is one of our national safeguards. But all men do not serve on juries, and if any calling is exempt ours should be. Our calling is entirely a personal one, which cannot be done by deputy. If we are compelled to leave our practice for some days we suffer great hardship and loss, which may be permanent. A trade can be carried on in the absence of the principal, our profession cannot. Another argument I would suggest should not be lost sight of. When privileges are granted to one body of men and not to another it seems to mark an inferiority of position, and we should therefore lose no opportunity of obtaining the privilege of exemption from juries, which medical men and chemists now possess.

And now, gentlemen, I will leave professional matters and come back to those of our own Association. This society has for some years taken first rank in the subjects discussed at its meetings, and in the manner in which they have been handled. I am anxious that during my year of office we should maintain our position, and I therefore ask you to give me all the assistance you can. Attend our meetings regularly, add your share to all our discussions, and use your persuasive powers to get brother practitioners to join us. Our meetings diffuse information and aid in correcting errors, but perhaps one of the grandest results is that the knowledge of each other obtained here leads to our working more in harmony and friendship with each other. I firmly believe that a great deal of the good feeling which now more widely exists amongst practitioners has resulted from the meetings of these associations, and I look forward to the speedy arrival of the time when our profession shall possess an *esprit de corps* which other callings will envy and admire. Our professional motto is *Vis Unita Fortior*, and such must be the guiding principle of every individual member.

Mr. Barling resumed his seat amid cordial applause.

Letter from Professor Walley.

At the request of the President, the SECRETARY read a letter from Professor Walley, Edinburgh, written in response to Mr. Barling's desire that he would favour him with his views on current questions affecting the profession.

Mr. T. H. MERRICK tendered his sincere thanks to the association for the double honour they had done him, first in selecting him as a candidate for the Council, and secondly in placing him in the proud position which he now occupied. The whole of the profession was to be congratulated upon the fact that all the eight candidates who were in favour of the new Charter had been returned. It showed that the great majority of the profession were entirely in favour of the Charter. He would not detain them longer, except to say that he hoped that when his term of office had expired, his humble endeavours would have met with their approval.

Mr. PERRINS moved a vote of thanks to the President for the admirable address he had delivered.

Mr. MALCOLM had much pleasure in seconding the vote. He regretted that their custom prevented them from entering into a discussion on the subject matter of these inaugural addresses, but, however individual opinions might differ, they must all feel that, in the address they had just listened to, Mr. Barling had dealt ably and eloquently with the questions of the day.

The vote, having been accorded, was briefly acknowledged by the President.

Professor PRITCHARD then delivered a lecture treating of "The Feeding and Management of Horses."

Discussion.

Mr. MALCOLM said he had listened to the lecture with very great pleasure. Most of them would agree with a great part of what had been told them. Personally he did not go quite all the way with Professor Pritchard on some points, but the general tenour of the lecture was what the majority of them had been practising for a long while. The first point the Professor touched upon was as to the quantities of food, and he instanced the quantities given to some heavy horses. In that respect they in Birmingham were in the habit of giving quite all that he had said, but a greater proportion of corn to hay than he had suggested. The Corporation of Birmingham allowed their cart-horses at present food actually amounting to 20lbs. of corn and 14lbs. of chaff per day. The Professor referred to 26lbs. to 30lbs. as the quantity given to 'bus-horses, and he seemed to think that was a large quantity to these small horses. He (Mr. Malcolm) could tell him that they had a number of horses not a bit bigger—namely, boat-horses—and these horses required even more than cart-horses. Some ten years ago, he tried to reduce the quantity to less than that allowed to cart-horses, and the result was they had a lot of them practically bags of bones. He then increased the allowance to that of cart-horses, but it was still insufficient, and the allowance had to be further increased. He attributed this to the hours these horses had to work; they went out early, and were sometimes working 18 hours at a stretch. They were fed as they went along the canal banks, and unless allowed an exceptional quantity of corn they could not be kept in condition. Touching on various foods, the Professor properly laid special stress on oats. That there was no other grain when given alone equalled oats for horses' food was accepted by everyone; there was nothing new in this—it was well-known, but further on he noticed Professor Pritchard spoke rather disparagingly of maize. He (Mr. Malcolm) had been in the habit of using maize for the last 15 years, and with the best possible results. Of course, they must remember maize consisted largely of

carbohydrates, or, in other words, were practically fat-formers, but they also contained a certain amount of flesh-formers. Beans, on the other hand, were particularly rich in flesh-formers—too rich for ordinary purposes to be given alone. That being so, why should they not use the knowledge which chemistry has given them, and mix the two together? So mixed, they got a food which no man could tell chemically from oats, and which was much cheaper than oats. No doubt, however, for growing animals they required a certain proportion of ash, which they did not get in the maize. He quite coincided with the Professor in his condemnation of badly made hay and straw and badly secured oats. In fact, far more depended upon the condition in which the corn was given than upon the kind of grain itself, provided always that it contained a due proportion of fat-formers and flesh-formers, *i.e.*, possessed a correct albuminoid ratio. The Professor referred to clean food and the prevention of calculi. On this matter he (Mr. Malcolm) was happy to say he could not speak, because he had never met in his personal experience with a case of calculus. Whether this was owing to the quality of the food or to curious coincidence he could not say. As to the number of times of feeding, he agreed with the idea that the feeding should be frequent, and in small quantities, for an animal with such a small stomach as the horse. That was an essential matter, and most of our large studs were now provided with nose-bags, so that the horses got small quantities at intervals. With reference to water, they would agree with the Professor as to the necessity of watering horses before they received their food; but there was an exception, and that was, when a horse returned in the evening from work in the spring-time, when it was often warm during the day and cold at night. If a horse came in after sweating, and was immediately allowed a large quantity of water, there would be the danger of congestion of the lungs following. He was in favour of allowing a horse to have his water beside him, in the loose box; where the corn was in one corner and the water was in the other, he could not mix the two, and so set up fermentation. On the question of washing, he concurred with Professor Pritchard; whenever he saw a case of cracked heels, his first instructions were to do away with washing, and the trouble was soon at an end. As to drainage, he agreed that if they were to use drains, there was nothing like the system of surface drainage which the lecturer had recommended.

Mr. F. D. Gooch also coincided with Prof. Pritchard in nearly all that he had advanced. With regard to maize, he was on the side of the professor and against Mr. Malcolm. When he was in Norfolk a great deal of maize was used, and though mixed with oats and crushed, much mischief was done. As to the quality of the food, in his district this season they had had abundant evidence of the best quality being the cheapest. If they had had one case of indigestion and intestinal derangement, they had had something like a hundred, and he attributed it almost entirely to deficiency in good fodder. Many horses had been almost entirely fed on wheat straw; hay was almost as dear as gold. As to the times of feeding, in Norfolk they went on the two journey system. The horses were fed at 5; went out at 6, came in at 11, and went out again at 1.30. As regards calculus, he had been rather unfortunate in the number of cases. He had found it especially in mill horses; these got the sweepings of the granaries, and their food was mixed with the dust and dirt which accumulated on the floor. Respecting litter, there was one kind to which the professor had not alluded, but his experience justified him in saying that tanned bark formed a very good bed for horses.

Mr. Olver, like those who had gone before him, had listened with much interest to the professor's able address. His principal object in rising was to say a word or two in defence of a class of men, who, he thought, the professor had hit rather hard—the farmers—as to the manner in which they fed their

horses. Speaking with knowledge of the West of England, and also of the Midlands, he had not found the horses fed in the way the lecturer had stated. The reason we did not find greater digestive mischief in animals working on farms was that they were fed on long fodder. The horse had a rackful of fodder throughout the night, and consequently had rarely an empty stomach; and if he was working, when the man had his lunch, the horse had his nose-bag. Certainly, in the district in which he resided, they did not find a large amount of digestive mischief from the way the horses were fed. He was inclined to think that linseed was not sufficiently used in the feeding of their horses, especially the young horses, and that at its present price, it was cheaper than bran. Professor Pritchard had said that it was wrong to wash under any circumstances. Disagreeing as he (Mr. Olver), did on the whole with washing, he could not say that he thought it was always wrong; he believed there were times, as for instance, when a horse had been hunting over heavy clay hand, when washing was necessary, but the horse should be washed with tepid water and thoroughly dried.

Mr. HUNTING said the professor had given them a picturesque description of water going into a horse's stomach, and in two or three minutes running into his cæcum; but he (the speaker), was inclined to deny any such action. The water when it got into the stomach was absorbed nearly as quickly as it got there, and cut a dead horse open whenever they would, they found the contents of the stomach somewhere about the same consistency—certainly better described as hard than soft. They might give a horse any number of bottles of medicine, and sometimes he died as the result, but they would not find much liquid in the stomach. He considered that the proper time for a horse to drink was when he chose to, and when he was offered, he would nearly always do it before he had his food. Professor McGill was now manager of the London Tramways Company, and he had adopted a system of feeding, which from the preconceived notions he (Mr. Hunting) had of feeding, ought to have killed every animal in the stables. Into every manger was put so much food, and then on the top of that food, half a pail of water was poured; the keeper stirred up the beans, maize, oats and chaff together. The horses looked as well as any in London. Mr. McGill, like Mr. Malcolm, and his (Mr. Hunting's) father, was an enthusiast in horse feeding, and these enthusiasts were apt to get a fad; but when they saw a fad going on all right for four or five years they knew there was a great deal of practical truth in it. As for maize, it was cried down by people who did not know how to use it. There was a proper albuminoid ratio, without which neither horses nor men could get on. Man by feeding on forty different things a day, got his albuminoid ratio and something over; but a horse had only three or four different things, and therefore care as to the chemical composition of the food became the more necessary. In beans and maize they had two things which were wanted, not only because of their chemical composition but their physiological effects. If they gave maize alone there was a tendency to laxity, if beans alone, to constipation; so that those two things balanced each other. They need not be combined in equal quantities, but with say, two-thirds maize and one-third beans they would get the albuminoid ratio right, and the physiological action right. With regard to another point, he believed it was invariably the case that in every calculus a nail or some other foreign body was found. He came across one in which the nucleus was an India rubber ring from a mineral water bottle. If calculus was entirely or very largely due to some metallic or other indigestible substance, it became more than ever necessary to use the magnets spoken of by Professor Pritchard. With respect to washing, although he was not in favour of it, he knew there were some who successfully practised it.

Mr. WRAGG said the London brewer's horse usually got 40 lbs. weight of

food—20 of oats and 20 of chaff. His opinion was that the heavy horses did better when fed partly on clover and partly on meadow hay, but light horses he never gave any clover to. Mention had been made of dust machines. It was a great question whether these machines did the good that was claimed for them, because his experience was that in a very large number of the cases of calculi sent to his infirmary dust machines had been used. No matter how good or pure the food, horses would be subject to calculi. He might remind Professor Pritchard that Robert the Devil died from calculus in the intestines, and that he (the professor) was called in to the case and made a *post mortem* examination. With regard to maize—he was against it even when mixed. He advocated water being kept always beside horses, and he always got it put there. He could show them two or three studs of considerably over 100 horses where this had been done, and in these studs they seldom got a case of colic.

Mr. WARTNABY agreed with what Professor Pritchard had advanced in the main, though he was inclined to disagree as to the fermentation which, it was said, was apt to be set up when a horse took his water at any particular time. If that was so they would have more cases of indigestion than they had in farmers' horses, which were brought in to feed and then turned out into the field to drink water *ad libitum*. He agreed that horses would be much better if fed oftener than they were. Customs seemed to vary much in different counties. In Lancashire, where horses were kept to work till two or three in the afternoon and never baited in the meantime, there were a large number of colic cases; but in Derbyshire, where they were baited in the middle of the day, colic cases were rare.

Mr. CARLESS (of Stafford) concurred with Professor Pritchard in his condemnation of maize. Maize, he considered, should only be given to hogs and fat cows. He did not, however, hold with Professor Pritchard as to the washing. They saw examples of the good effects of washing in shire horses; these horses were washed every day and looked as beautiful as possible, but it was of course essential they should be properly dried. He certainly favoured a modified view of washing rather than the entire condemnation of it.

Mr. BLAKEWAY (Birmingham) remarked that Professor Pritchard had given them a thoroughly "discussable" paper. As regards times of feeding, no doubt the intervals were often too long, but there could be no remedy in this respect in the case of hunters, which were out all day, and could not get anything to eat till they came home at night. With regard to bedding; if this was of wheat-straw, it should be thoroughly shaken up. Peat-moss was tried in a stable with which he was connected, but in the summer time maggots got into it and were a great nuisance. They used sawdust, and had not been bothered since—it was cleaner and smelt sweeter. The idea of using sea sand was new to him; he should have thought that the salt it contained would have been irritating and injurious.

Mr. STANLEY said that Professor Pritchard's views were so much in accordance with his own, that he had not much to offer by way of discussion of them. With reference to calculi among millers' horses, he believed the substitution of rollers for stones had had a very beneficial effect. He agreed that it was a bad plan to wash horses; it caused chill and it took a great many hours and a great deal of heat to recover the normal tone. He was pleased to hear the condemnation of Indian corn, which was not a proper food for horses which had to proceed at a trotting pace, although it might be useful for those that went slowly. Mr. Wartnaby had observed in horses fed on maize, when death had occurred amongst such stock, that there was nearly always affection of the liver.

Mr. W. C. BARLING said that recently, in the Forest of Dean Collieries, they had discontinued the use of maize in every possible way, and where they

used to have 20 or 30 cases of colic, now they did not get one. All food was wetted. He found an advantage in giving bean meal with crushed oats and a little bran. As to washing, his ponies, winter and summer, were washed from head to foot, scraped, and rubbed dry. He was sure that it was a benefit in every sense of the word, but it was necessary to rub them perfectly dry. As to ventilation, this should be high, if at the bottom a certain amount of cold air was bound to come in.

Mr. GIBSON remarked that bran was now cleaned so much by the millers, that they should have to find a substitute for it. With regard to washing, he agreed with Professor Pritchard, but he thought the machines had done a good deal in producing chapped heels, by cutting too close to the skin. As to maize, while he did not like it, it was the only way of reducing the cost of large establishments.

The PRESIDENT believed in washing nag horses, but not cart horses, except shire horses. His experience with a nag horse, accustomed to be washed and dried, was that, if not washed, he broke out in sweat, and could not be dried for hours. He was in favour of bandaging horses subject to windgalls. As to watering, it was better to keep water in a large trough, so that the horse could drink when he liked. His experience was that clover hay generally upset the horses. With regard to clipping horses' legs, there was a new machine made by Clark, which was well worth attention, and which left quite sufficient hair to protect the skin.

Professor PRITCHARD, in replying on the discussion, said the principal point of difference between himself and his hearers was on the question of washing; he had not heard anything that convinced him that he was wrong, but it would set him thinking about it. If they were to wash, he said without fear of contradiction, they must not wash horses while they were heated; if they did, they produced a congested state of the skin that would lead to mischief. Some shire horses, and some of the finest shire horses in the world, were never washed, but cleaned with dry, fresh deal sawdust. As to horses breaking out and not drying, plenty of horses would do that; but there was a remedy for it—a little clean straw under the rug would dry a horse as perfectly as it could be dried. He intended to say something about crushed corn; he did not agree with it, as a rule, but there were circumstances when it was advisable—when a horse was teething, or in the event of diseased teeth. As to quantities of food, he accepted the statement as to the amount required for boat horses. With regard to watering, he adhered to his view that the way to secure the best possible digestion was to water a horse before he was fed. He himself tried Abernethy's plan for three weeks, and though it was not altogether pleasant, because he had always been accustomed to eat and drink at the same time, he was bound to say that he was never better in his life than during those three weeks. To pass on to other points, he agreed with Mr. Gibson as to the bran; and he was interested to hear that the alteration of the mode of grinding had largely done away with cases of calculus among millers' horses. No doubt there would always be calculus, but with greater care the cases would not be so numerous.

On the motion of Mr. MERRICK, seconded by Mr. GIBSON, a hearty vote of thanks was accorded to Professor Pritchard for his able and interesting lecture.

Professor PRITCHARD returned thanks.

Mr. STANLEY moved, and Prof. PRITCHARD seconded, a cordial vote of thanks to the chairman, and this having been carried, and acknowledged by Mr. Barling, the proceedings closed.

The members subsequently dined together, and a very pleasant evening was spent.

H. J. DAWES, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting took place at the County Hotel, Newcastle-upon-Tyne, on May 20th, the President, G. R. Dudgeon, Esq., in the chair. There were present Messrs. C. Hunting, C. S. Hunting, J. Gofton, H. Hunter, A. Hunter, F. T. Finney, C. Stephenson, J. R. Jarvie, J. Arup (Denmark), and J. W. T. Moore (Acting Secretary).

Before the minutes were confirmed great dissatisfaction was expressed by all the members present at Mr. Mulvey's attempting to dictate to the profession, by issuing his circular as to whom they should vote for in the recent election.

The PRESIDENT read a letter from Mr. Mulvey requesting that his name be struck off the roll of members. It was proposed by Mr. C. STEPHENSON, and seconded by Mr. C. S. HUNTING "That Mr. Mulvey's resignation be accepted." Carried unanimously.

It was proposed that Mr. D. Dudgeon's letter respecting Mr. Mulvey's resignation be held over until the next meeting. Carried unanimously.

It was proposed by the PRESIDENT, seconded by Mr. C. STEPHENSON, and carried unanimously "That the President and Secretary be empowered to employ a reporter when they consider it necessary."

New Appliance.

The PRESIDENT, on behalf of Mr. Mitchell, Sunderland, showed a girth used for casting and fixing large animals for castration. A strong double ring is fixed on each side, and Mr. Mitchell states that there is no liability of the rope becoming "jammed" as was the case when the girth had a single ring only. He had used it in twelve cases during the last fortnight with complete satisfaction. Some of its advantages are: 1. Fewer hands required. 2. Greater safety to animal and operator, the feet being drawn up to the girth, the parts are more readily got at, and the animal is so fixed that it is impossible for him to struggle. The animal is easily set free by slacking one rope and allowing him to fall on to that side, then release the other side, undo the girth strap, and the whole fastenings drop clear when he gets up. Mr. Mitchell had his ordinary casting rope halved, a slip noose made at one end of each half, which he puts on to the fore pastern, passes the end of the rope through the lower division of the girth shackle, round the hind leg from the outside, brings it back through the upper division of the shackle, and when both sides are ready, gives the order to pull, when the animal drops quietly on to his belly on the ground where he stood.

The PRESIDENT, Messrs. STEPHENSON, C. HUNTING, C. S. HUNTING, H. HUNTER and MOORE took part in the discussion which followed, some fear being expressed that there was a danger of the girth slipping backward, owing to the absence of any rope round the neck; but they thought it an improvement upon the girth with only a single ring. A hearty vote of thanks was accorded to Mr. Mitchell.

The ACTING SECRETARY brought forward a communication from the Central Veterinary Medical Association respecting two resolutions unanimously adopted at their meeting on April 5th, in favour of a higher general education and a four years' curriculum. A long discussion took place, in which the PRESIDENT, C. STEPHENSON, J. GOFTON, C. HUNTING, H. HUNTER, C. S. HUNTING and MOORE joined, no definite result being arrived at; the consideration of the subject was adjourned until the next meeting.

Mr. C. STEPHENSON, in a few very appropriate remarks, proposed, and Mr. C. HUNTING seconded, endorsing Mr. Stephenson's remarks "That the President and Secretary write an official letter of congratulation to J. E. Peele, Esq., F.R.C.V.S., Durham, on being made a Justice of the Peace. Carried by acclamation.

JOHN W. T. MOORE, *Acting Secretary.*

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

(Concluded from Vol. XXXIV., page 468.)

The Professor then said something about examining horses, and the certificate to be shown to a third party—"on the other hand, if the Veterinary Surgeon supplies the seller with a written opinion, knowing beforehand that the seller is likely to use this as an inducement to the purchaser to buy the horse, he comes to have a duty towards the purchaser as well as towards the seller; and in that case any unskilfulness, or negligence, or want of good faith, or misrepresentation, or concealment, or equivocation, may land him in a position of personal liability to the purchaser, or may expose him to a charge of collusion." That was contrary to what he had been taught of the law. He had had a little experience, and he thought he was right in saying that they were only liable to the man for whom they had examined the horse, and whose name appeared on the certificate. That was the man who could sue them and no one else, unless he was acting as agent, and the Veterinary Surgeon knew it. He examined a horse not long since for a foreigner, who was at the time in Italy, and he knew the man who employed him was only acting as agent, therefore he considered himself liable to him, although his name was not on the certificate. Let them bear in mind that there was only one man to please in examining a horse. Very often the buyer and seller came and talked to them to see which could get the best, and he would repeat his advice, "you have only got one man to please, and that is yourself, don't care a toss for anybody else." If they once began qualifying, they would land themselves into complications. He thanked them very much for listening to him.

Mr. GOOCH said he did not think there was much for him to say; Mr. Goodall had said everything that he (the speaker) could touch upon. There was one matter, however, upon which he would like to say a word. If a purchaser came to ask whether the horse he had bought was sound, he should certainly not give a certificate unless it included all the defects he observed. If, however, the buyer had written to him stating that he had noticed the horse suffering from so-and-so, he generally put it in a letter with his certificate, keeping the purchaser's certificate. As regarded placing any patent defects upon the certificate he could certainly do so—it was highly necessary. He had a case in mind *Wood* v. *Thompson*, which had recently been heard at a County Court. A horse was sold as sound and in less than a fortnight went lame. Afterwards the purchaser wrote stating that the animal was going lame and that he should return it. The seller replied: "If you like to bring the horse back again to my place I will return cheque in full." The buyer refused, and the horse was sold in the Nottingham market. He (the speaker) was subpœnaed to appear at the County Court to give evidence, but the defendant lost the case simply through a veterinary surgeon saying that a splint was unsoundness in the eyes of the law, whereas the opposite side called a veterinary surgeon to state that the splint was no bigger than a pea. A horse that kept behind in a pair in harness would often get wrung shouldered, but that could not be called unsoundness—it was, he thought, always due to weakness in the animal.

Captain RUSSELL said it was important that they should remember that the law defined "sound" as "perfect," and when examining a horse they came upon anything that was not perfect, and not natural, they must mention it in the certificate, or at all events be careful to mention it to the person who was going to purchase. It was better, however, to put it on the certificate than to

privately mention it afterwards. He took a great interest in reading the paper by Professor Williams, and in travelling from Nottingham to Grantham, he had read it four or five times over. He considered the Professor had placed before them a paper of great value, but not quite distinct enough in some of its points. He did not agree with him, on page 2, where he said: "In the second place, the professional man is often asked to advise as to the suitability of the animal for certain work, &c. I think in such a case he is bound to give an opinion and to write it in his certificate if called upon to do so." He thought a veterinary surgeon had nothing to do with the qualifications of a horse for what he was supposed to be wanted for. He had been brought up to believe that when a man put a horse into his hands he had to examine him for soundness and nothing else—he did not believe it was his business to tell the man anything else. He once had a letter from a gentleman asking him to examine a horse, put him in harness, and drive to the railway station to see if he would stand the trains. He replied, referring the writer to a breaker in the town. He thought the less they had to do with giving opinions as to whether a horse would suit people or whether they were buying too high or too low, the better it would be for themselves. They were not valuers—they were veterinary surgeons. It was their duty to determine whether a horse was sound or unsound—there their duty ended. On page 3 the Professor said: "When, then at any time the veterinary surgeon may think that an undue advantage is being taken, or had been taken, of his client, I think that he is, from his general knowledge of thevalue of horses, bound even to offer his advice and come to the rescue of his client, and to state his opinion in his certificate if requested to do so." He should be very sorry to do that, even if he never examined another horse. He should certainly never examine a dealer's horse. Take a case in point. Some years ago he was asked to examine a pair of state carriage horses. He examined them and they were both sound. The gentleman who had them brought them into the country after the London season, and put them into a chariot and went to visit a friend some sixteen miles off. He got there with considerable difficulty, and it took him nearly all night to get back. The animals were good enough for state horses, or galloping about Hyde Park, or the London streets, but they were no use at all for country work, but he should not take it upon him to say that the horses were no good to the man except for London. Was it his business to tell a man that his hunter was only a hack or only a carriage horse? The man was going to purchase and he must use his own wits. He took it that as Veterinary Surgeons, they had simply to decide whether a horse was sound or unsound—there their business ended. There were many horses they could ride, and there were others that it was a perfect curse to be on their backs, but some men would say that the latter were the sweetest animals they were ever on. He remembered being on one, and when he galloped him up hill it was all he could do to keep himself in the saddle, or his feet in the stirrups. He was all right on the level, but a brute to go up hill. A man in the neighbourhood had him at the present time, and considered him one of the best hacks that ever he was on. He was rather surprised to hear that there was a consensus of opinion that they should mention in the certificate every defect they observed. It had been his rule heretofore if he discovered defects to render a horse unsound such as spavin, to reject the horse, and he could call to mind one case which he remembered very well indeed. He helped to examine a horse that was swung in the back but had a tremendous spavin on one hock. He thought "This man wants to sell his horse. I can crab that horse for spavin; I don't think I need say anything about the back." He rejected it for spavin and advised the man not to buy it. He did, and afterwards cursed him to all eternity for not telling him that the animal was swung in the back. Perhaps he ought to have mentioned

it on the certificate. When a horse had several defects he did not consider it necessary to mention them all; it was sufficient to mention one or two, and reject the animal as unsound. He did not think he need detain them any longer. He was glad to say that on the whole he agreed most heartily with the remarks Mr. Goodall had made, because he was a man in the profession they could look up to as an examiner of horses.

Mr. GOODALL said, as regarded the words "sound" or "unsound," he knew a veterinary surgeon who never used the words. He simply wrote to his client to buy or leave it alone.

Capt. RUSSELL: We want to agree among ourselves on the matter.

Prof. WILLIAMS said he might tell them that he consulted a very good lawyer friend of his when he wrote the paper. Of course, he had Oliphant and other works which he might have quoted, and made the paper much longer, but he never liked to make a long speech, nor read a paper which occupied too much time. With regard to the point of advising a client what a horse was fit for, he thought that was an important part of their business, and if they did not do it they would suffer from it. If they were asked whether a horse was best for the harness or saddle, they ought to give an opinion as to whether the animal had the shoulder for the saddle or not—they need not say whether the horse would please anyone but themselves. As a matter of fact, he never rode a horse—he got somebody else to do that. This was a point upon which he consulted his friend, and he thought it should go in the paper. If an ignorant man came to them, who rode sixteen stone, and wanted to buy a horse which would only carry ten—if he asked, "Do you think that horse would carry me?" the veterinary surgeon should certainly reply, "No, I don't think he will." Then there was another legal point as to the value of horses. He had always said that, as a rule, the less they had to do of that the better, but if a man placed himself in their hands with regard to the purchase of a regular screw, worth just a few pounds, he thought they were compelled, from a professional point of view, and in law, too, to offer their advice upon the point. There was another legal point on the last page: "On the other hand, if the veterinary surgeon supplies the seller with a written opinion, knowing beforehand that the seller is likely to use this as an inducement to the purchaser to buy the horse, he comes to have a duty to the purchaser as well as towards the seller; and in that case any unskilfulness or negligence, or want of good faith or misrepresentation, or concealment, or equivocation, may land him in a position of personal liability to the purchaser, or may expose him to a charge of collusion." Mr. Goodall had said that they were not liable to the purchaser, that the seller sold the horse upon their certificate, and they had no further responsibility besides the opinion they had given to the man who employed them.

Mr. GOODALL: The law is that the buyer must look after himself.

Professor WILLIAMS said his friend saw distinctly that they were responsible. If a man, through their opinion, bought an animal and suffered loss, under the circumstances he had mentioned, they were not only responsible to the seller, but to the buyer also, and in fact it almost amounted to fraud, if it could be proved. What had happened in courts of law bore particularly on this point. Although misrepresentation had not been made either to the purchaser, the legal view was that they were distinctly responsible to a man who suffered loss through any act of theirs. Suppose they examined a pair of horses, and in about a fortnight afterwards they fell ill. It was a common thing; the owner said, "I bought a pair of horses to do my work and you passed those horses—now they are suffering from cold." What could a man do to protect himself in a case of that kind? The owner then said, "I will sell those horses, and buy new ones." He did so, and in a fortnight they were down with cold. They were landed again! The only way was to persuade their client

to have a little patience. The horses would pass through infantile disease and if he would only have a little patience, he (the Professor) would guarantee he would have a pair of horses that would last him many years. It was simply want of patience on the part of buyers, and veterinary surgeons had very often felt this sort of thing. He thought that every buyer should be told that his horse, although perfectly free from cold, perhaps in a week or two it might be laid up. He had sometimes spoken to people to that effect, and although at the time they had been unfriendly, afterwards they all had thanked him very much. As to spavin that was a question they would all differ in opinion about, as long as the profession lasted. He thought it was as well if they passed a horse as sound, to mention any defects. He believed they were bound to mention defects. When a purchase was being made, and if they did not mention defects, they might land themselves in a difficulty. With regard to the definition of "sound," he could not possibly conceive that it meant "perfect." He took it that it meant that the animal was able to do good work and serve the purpose for which he was wanted. He did not think a man was ever justified in stating that a horse was perfectly sound. He might think he was perfectly sound, but he did not think he ought to state that. It was simply a matter of opinion "soundness" was certainly not "perfect," because there was nothing absolutely perfect. He condemned the habit of saying "I do not see he is lame." He had known such cases where the lameness had been palpable, but the law would never cover their ignorance. They had to deal not only with lawyers and judges upon the Bench, but with juries, and there was often a question of patent and palpable unsoundness. It was held that what could be seen by anybody as palpable ought to be seen by the buyer, but judges had often decided otherwise, County Court judges particularly. They held "this man is not supposed to know—he could not detect so-and-so. He could not see that sort of thing." It was very true that the law was made for wise men and not for fools, but there were juries who would often legislate for fools as well as for wise men. In horse dealing transactions they often had dealings with men who thought they knew a lot. There was a man in the Edinburgh Town Council bought a horse which turned out a bad one, and he brought an action to recover. The animal was represented as a good harness horse, but he was such a fearful roarer that he could not go ten yards. The man argued that it could not be a harness horse if he was so bad as that, but the law did not cover his ignorance. He was a Councillor, and in the cross-examination the lawyer said to him, "You say you know nothing at all about horses?"—"No, Sir; nothing at all. I left it in the hands of Mr. So-and-so." "Who is coachman for you?"—"My brother." "Does he know anything about horses?"—"Not very much, I think." "What were you in your younger days?"—"What has that to do with it?" "Did you drive a cab in your younger days?"—"Yes, I did." "And you had a cab or two of your own?"—"Yes." "Do you mean to tell me you were a cab proprietor, and knew nothing at all about horses?" This floored the man, and he lost his case. The law did not protect assumed ignorance. With regard to brushing, if a horse suffered from it, it was malformation and ought to be mentioned in the certificate. Although it was malformation the animal was unsound, because brushing interfered with its usefulness. Trains never entered his mind when he wrote the paper; or that a veterinary surgeon should see whether a horse could stand trains. He simply meant that he should say whether the animal was suitable for a working horse, or a carriage horse, as the case might be. He thanked them for the able way in which they had discussed his paper. He thought that the conclusion was self-evident—that a certificate must be framed according to the opinion upon each particular case; they could not possibly have one form of certificate. As a general rule he did not certify—he simply wrote a letter. He wrote "I have

examined horse, and found, so-and-so." He never certified, though he did not think the word "certify" meant very much in law.

Mr. GOODALL moved a vote of thanks to Prof. Williams for the able paper he had put in their hands. He for one had felt great pleasure in being there that day, and hearing the discussion upon the subject.

Mr. RUDKIN seconded, and it was carried *nem. con.*

Prof. WILLIAMS briefly replied.

Mr. GOOCH moved that Lincoln be the next place of meeting. Capt. RUSSELL seconded; Mr. HARTLEY supported, and it was carried.

Mr. FREER moved a vote of thanks to the retiring President for the manner in which he had carried out the duties of his office.

Mr. GOODALL seconded, and the motion was unanimously adopted.

Mr. DICKINSON thanked the members for the compliment, and the proceedings ended.

The members afterwards dined together.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

A MEETING of this Association was held in the North-Eastern Hotel, Darlington, on March 4th, Mr. W. Awde, President, in the chair. There were present Messrs. F. R. Stevens, W. T. Briggs, H. Gelsthorpe, and W. N. Dobbing, Darlington; P. Snaith, J. G. Deans, and H. H. Roberts, Bishop Auckland; G. E. Nash, Richmond; J. E. Peele, Durham; A. Peele, West Hartlepool; Jno. Nettleton, Northallerton. Visitors: Messrs. Harvey, Darlington; Clarkson, Reeth; W. Hunting, Esq., London, and Dr. Lawrence, Darlington.

The SECRETARY read a letter received from the College Solicitor asking for information respecting a person who had applied to the Privy Council for registration an an existing practitioner.

Mr. SNAITH volunteered to supply the desired information to the Secretary, who would forward it to the proper quarter.

Mr. HUNTING then read a paper on "Swelling, as it affects the Legs of Horses," which gave rise to a good discussion by all the members present, after which a hearty vote of thanks was passed to Mr. Hunting for his kindness in having come so far, and in having contributed so valuable a paper.

Another meeting of this Association was held on June 3rd, Mr. W. Awde, President, in the chair. There were present Messrs. F. R. Stevens, W. T. Briggs, G. J. Harvey, and W. N. Dobbing, Darlington; G. T. Pickering, York: G. E. Nash, Richmond; H. H. Roberts, Conndon, and Jno. Nettleton, Northallerton. Apologies for non-attendance were received from Professors Walley and Williams, and Mr. J. E. Peele, Durham.

The SECRETARY read copy of petition forwarded by Professors McCall and Williams to the Privy Council, and he was instructed to write to Professor Williams informing him that the Council of the Royal College of Veterinary Surgeons having been elected for the purpose of dealing with the education of the veterinary student and other matters connected with the profession, it was not considered advisable to take away any power from them and transfer it to the Privy Council as proposed.

Mr. G. J. Harvey, M.R.C.V.S., Darlington, was nominated for membership.

Mr. Alexander Neish, M.R.C.V.S., Northallerton, was also nominated.

It was decided that in future, visitors who come to the meetings to read papers, should have dinner or tea tickets presented to them, as the case may be.

The election of officers for the ensuing year was then proceeded with as

follows:—*President*, Mr. F. R. Stevens, M.R.C.V.S., Darlington; *Vice-Presidents*, Mr. W. T. Briggs, M.R.C.V.S., Darlington, Mr. H. H. Roberts, M.R.C.V.S., Conndon; *Treasurer*, Mr. G. E. Nash, M.R.C.V.S., Richmond; *Secretary*, Mr. W. Awde, F.R.C.V.S., Barnard Castle; *Auditors*, Mr. W. T. Briggs, M.R.C.V.S., Darlington, Mr. H. Gelsthorpe, M.R.C.V.S., Darlington.

Mr. W. T. Briggs then read the following paper on—

"Parturition in the Mare and some of its Complications."

Mr. President and Gentlemen,—The subject which I am about to introduce to your notice, "Parturition in the Mare and some of its Complications," is one of great interest and considerable importance to the country practitioner. The period of gestation is usually from 11 to 12 months in the mare, and there is an old saying that a hare and a mare carry their young a year. About a fortnight before the mare is due to foal she should be placed at night in a comfortable loose box, which has been thoroughly cleansed and disinfected. If an agricultural mare, she may still do light work, but it is not advisable to put her into shafts; if light bred she may be turned into a field or gently exercised when the weather permits. The signs of approaching parturition are:—fulness of the mammæ, with oozing of a pale, waxy fluid or milk from the teats, the quarters drop in, the vulva becomes swollen and moist, and there is more or less restlessness. The mare is a very shy and sensitive creature at the time of parturition, and in the wild state has been known to travel many miles in search of a secluded spot to bring forth her young. It is, therefore, advisable when she is about to foal not to remain by her, but to leave the box and wait until she lies down before rendering her any necessary assistance, or the probability is, she will foal standing and cause injury to the foal, if it should fall on the ground. Some owners are very particular in having the umbiiical cord tied after the foal has breathed, and then separating mother and offspring by cutting the cord. There may be some advantage in this. The umbilical cord in the foal is, no doubt, stronger than that of any other animal; consequently, there is sometimes great resistance in separation by the ordinary method, which causes dragging on the tender body of the foal and probably injury. The cord may break off either too short or too long; if the former, hæmorrhage might occur; if the latter, there is danger of the mother treading upon it and injuring the foal when it attempts to rise; by tieing and cutting this will be avoided. There is also a probability that pervious urachus would be prevented. After a normal but difficult parturition, either from weakness or a very large foal, or both, there may be much prostration; the mare should be offered a good supply of oatmeal or linseed gruel to drink, and if necessary, a stimulant administered. If there has been much sweating the body should be thoroughly dried, or she will soon become cold; she should not be left until she is quite dry and comfortable. The foal must not be overlooked; the mare may be encouraged to lick it, and if it appears to be weak let it be fed with some of its mother's milk, and in all probability with a little assistance, it will soon be able to rise and take its own supply. The complications at the time of parturition and afterwards are somewhat numerous, therefore I will only mention those which are most likely to occur, viz.: Inability to bring forth the fœtus, either from mal-presentations, which are numerous, deformity, or imperious os-uteri; retention of the placenta; after-pains; post-partum hæmorrhage; inversion of the uterus; rupture of the uterus; metritis and parturient laminitis. During the time that I had the opportunity of attending cases of parturition, I always felt a great amonnt of uneasiness when called upon to assist a mare. In my opinion, she is the most delicate animal we have to deal with, as a very little interference will sometimes cause vexatious results, and being of large money value generally

one feels considerable responsibility. When called on to attend a case of parturition, the first question will naturally be: "How long has this mare been in labour? If she has been over an hour, and the pains are strong, I generally give a large dose of tincture of opium before commencing to make an examination, it soothes her, and partially controls the expulsive efforts. A normal parturition in the mare is generally of short duration, the contractions of the uterus being very powerful. When parturition is delayed she soon becomes distressed, but the opiate quietens her, and gives the operator a better opportunity of exploring the womb. Do not forget to ascertain if the animal is quiet; should there be a doubt, secure the near hind leg with a side line before you commence the examination. When you have examined her, it is advisable to secure those parts which present themselves favourably for delivery. In speaking of mal-presentations, I will take just one form which, I think, is the most difficult, viz., a front presentation where the head is lying back upon the loins and both forefeet pressed well back under the chest. In this form of mal-presentation, I think it is good practice to first attempt to secure both forelegs at the knees, and then search for the head before bringing any part of the fœtus into the passage; but, if the head cannot be reached, then one leg, whichever is considered the most advantageous, should be exposed, and by gentle traction the operator may be able to secure the head. If the head is secured first and brought into the passage, there will be great difficulty for want of room in getting the legs. There is no doubt that the most troublesome part to reach is the head, and I sympathise with the man possessed of a short arm who has a big cart mare for a patient. If delivery cannot be effected in the standing position, let the patient lie down if she will, if not, she must be cast upon a deep bed of straw. Great care must be used to lay her down as gently as possible, as a violent fall might cause rupture of the uterus. When in the recumbent position, the head may be secured and relief obtained. A long hook will be found useful in drawing the head into position, but it requires great care to avoid injury. If delivery cannot be accomplished by these means, I am afraid the only resource is embryotomy, which is a tedious operation. The limb which has been brought into the passage may first be severed from the body, which will give more room to secure the head. In these remarks I do not presume to teach the practitioner what he should do. I found that such cases were very easily talked of, but very difficult to successfully complete. In a case of this magnitude, much time and labour must be spent before the mare is delivered, and her strength should be maintained by stimulants. The operator will also suffer from cramp in the fingers and arms; I found that plunging the arms into cold water gave relief. After delivery, the uterus should be washed with an antiseptic injection, and she will also require careful watching to guard against untoward results. *Impervious Os Uteri* may arise from simple spasm, induration or complete obliteration. If the former, time must be allowed, but not more than an hour if the pains are strong, and during that time dilatation can be very much assisted by the application of extract of belladonna to the os and a bag of hot bran applied to the loins. A dose of opium may also be administered if there is much uneasiness, and it is probable that when the part is again examined it will have responded to the treatment, and delivery will soon be accomplished in a natural presentation. It the obstruction arises from induration, there surgical measures must be used, and the part opened by incision. If there is complete obliteration, that part of the uterus which favourably presents itself must be carefully incised, and the fœtus and membranes removed as early as possible. There is no doubt that this operation is a formidable one—with questionable results, but, thanks to nature's care, we are not often called upon to perform it. ***Retention of the Placenta*** is not so common in the mare as it is in the cow; this can be

accounted for by the membranes being differently attached in the two animals. In the mare the attachment is formed continuously by small villi, but in the cow it is only adherent at certain parts, the connection being arranged by corresponding eminences called cotyledons, therefore the expulsion of the fœtal membranes in the mare can be much more easily effected. When the after-birth is retained, it should not be allowed to remain more than twelve hours after labour, before measures are taken to remove it. In proceeding to extract it, a towel should be used to hold it, and gentle rotatory traction may first be tried, which is generally successful; should it be ineffectual, the hand and arm must be well lubricated with carbolic oil and introduced to remove the obstruction. If there should be slight hæmorrhage, alarm need not be occasioned; the injection of some cold water and disinfectant will cause contraction and bleeding will soon cease. If, on the other hand, there should be profuse hæmorrhage, a strong astringent should be added to the injection. Where there is no hæmorrhage after the removal of the membranes, I think it is always advisable to wash the uterus with a disinfectant, as the mare is more subject to septic mischief than other animals. Either permanganate of potash, perchloride of mercury or carbolic acid may be used; I prefer the latter. *After Pains* are generally due to contractions of the uterus consequent on protracted labour, unless there is approaching metritis, which will be mentioned hereafter. Sometimes a portion of the placenta being retained will cause the pains. Relief is generally obtained by the administration of a few doses of sedative medicine if the pains arise from the efforts of the uterus to gain its normal position. *Post-Partum Hæmorrhage* or *Flooding* is more common in the human subject than it is in the lower animals, still the veterinary surgeon is sometimes called upon to render assistance; often his services are sought too late, and the animal is in a state of collapse when he arrives. The symptoms of flooding are, if the bleeding is internal, weak pulse, blanched membranes, glassy appearance of the eyes, sighing, cold sweats and staggering; should there be external bleeding, the large volume of blood will be diagnostic. The causes are: injury to the womb during the act of foaling, forcible removal of the placenta membranes, non-contraction of the uterus, or rupture. The treatment, of course, is to suppress the hæmorrhage as early as possible, either by the injection of a strong solution of ferri perchlor., or plugging with a large sheet dipped in the solution; cold water should also be applied to the loins and body. The condition of the mare should also be attended to. Whilst the veterinary surgeon is suppressing the hæmorrhage, a dose of whisky or brandy may be administered, to which can be added a dose of opium if there is pain. Other medicines can be given if preferred, as iron, salts of lead, ergotto. One might have to attend such a case where the owner prohibits the use of alcohol for teetotal reasons, then recourse must be had to other remedies. *Inversion of the Uterus.* In a case of this description there is no need for me to describe the symptoms; on entering the box they will be very evident and of great volume, sufficient to make one feel that he would like to be out of the job. The causes are general weakness, non-contraction of the uterus, relaxation of broad ligaments and forcible removal of the placenta. Inversion may be partial or complete. In the former, only the body of the uterus is inverted, and in the latter the coruna are also involved. Before proceeding to return the womb, it should be placed upon a clean sheet and all impurities removed by careful washing with tincture of opium and cold water; should the placenta be adherent, which is not very probable in the mare, it should be first carefully detached; there will also be some tumefaction if the inversion has been of long duration, which will be reduced by the application of the water and opium. If the uterus is cold and discoloured, warm water should be used. Some practitioners advise scarification of the part where there is much swelling, but I cannot agree with

this mode of treatment, as it might lead to profuse hæmorrhage or rupture, which would add considerably to the difficulty of reduction. To decrease the swelling it has been advised to have a broad piece of linen passed round the womb, and well wetted with an astringent, the two ends drawn tight, and the compression persevered with until the swelling is somewhat reduced. After the cleansing process, we come to the most tedious and difficult part of the operation, *i.e.*, the return of the uterus to its proper position. There is generally a large mass to contend with, which must be supported on a level with the vulva, the mare standing. To support it two assistants are required, and the easiest way to hold it in the proper position, is to have strings tied to each corner of a sack, and the ends fastened round the assistants' shoulders, who are facing each other; the sack can then be placed under the sheet, and the uterus raised or lowered as required; the assistants will also have their hands free to render further help when necessary. If there is much straining a twitch should be applied to the animal's nose, and a strong band tightly fixed round the body, the loins should be pinched, and the tail elevated as much as possible. Tracheotomy has also been tried with good results. If there should be complete inversion, the cornua must be first sought for and returned, and the body then dealt with, the closed fist being applied to the fundus, and gently pressed up to the vulva, and the viscus manipulated with the other hand. It will be found a more difficult matter when only one hand is at liberty, therefore an assistant could gently press the fundus in the direction required, whilst both the operator's hands would be free to effect reduction. A pessary is also used, one end being applied to the fundus, and pressure at the other end made by the operator's chest. I tried it once, but I soon abandoned it as useless. In returning the womb the pressure must be gentle, commencing with the parts next the vulva, and when the animal strains, the resistance must be only sufficient to keep in position the parts already returned. When the organ has been returned, careful search should be made to ascertain if it is in its proper position; if it is not properly replaced the animal will continue to strain, when another examination should be made, and the parts adjusted, if possible, or the case will do badly. A truss should then be applied, and the hind parts well elevated; it would be advisable to give a strong sedative, and keep the patient standing for several hours afterwards if she is not too much exhausted. Sometimes the uterus is allowed to remain inverted too long before attention is given, and it is just possible that it is in a gangrenous condition when medical assistance is obtained; or it may be so lacerated and otherwise injured that it would be useless to return it. In such a case the only alternative is amputation. In carrying out this operation, care must be taken that there is no protusion of intestine before applying the ligature. This operation has been performed with success. *Rupture of the Uterus* may take place during parturition or afterwards. If it occurs during labour it is just possible that the fœtus will fall into the abdominal cavity, the mare suffers great pain, and the expulsive efforts become weaker, or may cease altogether. On examination the fœtus cannot be found, and should a portion of intestine be discovered, which is not unlikely, the prognosis is unfavourable, and the most humane treatment is to end the animal's sufferings. Rupture generally arises from either weakness of some part of the organ, resistance of the fœtus through mal-presentation to the expulsive efforts of the uterus, or an accident, perhaps when assistance is being rendered by one of the great number of empirics (who usually pride themselves on their superior obstetric skill) violently thrusting his fist through the womb. I also think that it may be caused by the mare throwing herself down at the time of parturition. I remember one case where the animal had no doubt caused this lesion by her own violence: she was so very unruly that it was dangerous to go near, and when I examined her I could not feel anything; the uterus was a large cavity. At that time I

had an arm in a sling, therefore I presented a sorry figure in the case. After several weak expulsive efforts, a portion of the small intestines were presented, and the animal was destroyed. If the rupture has taken place in the upper part of the organ it may be felt, but should the rent be in the lower part diagnosis is very difficult. The treatment of this complication is very unsatisfactory, especially when the lower part of the uterus is the seat of the injury, the hæmorrhage, if it is profuse, cannot be checked, and death will soon take place either from loss of blood or peritonitis. If delivery has not been effected it should be carried out as early as possible, and the fœtal membranes must also be removed as carefully as possible; this will give the womb a chance of contracting, which will help to control the hæmorrhage. If contraction is retarded, the hand should be introduced for some time, which will probably stimulate it if the rupture is not extensive or at the bottom of the organ; cold water can be applied to the loins, and an astringent given. Should there be straining, opium or a hypodermic injection of morphia must be administered, and the animal's strength supported with stimulants, and light laxative diet allowed. When the fœtus has fallen into the abdomen there is another operation to be performed, but being a very dreadful and unsuccessful one in this animal, I will only mention it by name, *i.e.*, the Cæsarian operation. I think I may say that there is not one of us in this room who would volunteer to perform it in the mare single-handed, which no doubt we should have to do.

Rupture of the uterus after parturition, I think, very seldom occurs, unless it is complicated with inversion, of which I have already spoken. The next and, I think, the most frequent and fatal complication we have to deal with in the mare is metritis, of which there are various forms. The animal may have had a comparatively easy time and to all appearances be fully recovered, or she may have had a very difficult labour in which assistance has been given and unavoidable injury to mucous membrane caused. About 48 hours afterwards or sooner she does not appear well, and on examination the temperature has risen two degrees or more, her desire for food gone, non-secretion of milk, the coat is staring, the pulse hard and considerably increased in number of beats per minute, colicky pains, mouth hot and clammy, respiration hurried, injected mucous membranes, straining and swelling of the vulva with a discharge of a reddish-tinged fluid which is very diagnostic. This disease generally arises from septic matter being introduced into the blood by some means, either from retention of the placenta, poisoning of the injured parts by a difficult labour, infection may possibly be conveyed by the operator who, previous to being called in, has been attending to a case of injury where there is a discharge of fœtid matter, and his hands and clothing have not been thoroughly disinfected. The removal of a dead fœtus by embryotomy may also cause it.

Simple metritis may arise from exposure to cold, but I think the majority of cases arise from septic mischief. This disease is of such a serious and rapid nature that energetic means must be adopted to check it as quickly as possible. The uterus should first receive attention by being thoroughly washed out with a strong solution of carbolic acid (1 to 25), and any abraded parts may be dressed with carbolic acid 1 oz., olive oil 10 ozs., and eucalyptus oil ½ oz. This should be done at least twice a day until the dangerous symptoms are abating. Some practitioners no doubt prefer the solution of permanganate of potash, but I like the carbolic acid because of its sedative as well as antiseptic properties. Internally salicylic acid, or large doses of quinine have been found beneficial, or a dose of linseed oil and tincture of opium may also be administered if there is much pain and constipation. Hot blankets may be applied to the loins and mustard to the abdomen if the pain continues, and should there be much exhaustion stimulants in gruel may be administered. I will not say more respecting the treatment of this grave complaint, but I

hope that someone will be able to enlighten me considerably as to the most satisfactory mode of treatment. It is, perhaps, not necessary for me to advise the exercise of caution against inoculation of the hands and arms when treating metritis or in making a *post-mortem* examination. It may not be out of place to mention here that after-pains in ewes some seasons are very prevalent and destructive, which is no doubt due to septic mischief. The best remedy I found was pure carbolic acid 6 drs., water 10 ozs. the mixture to be put into a long-necked bottle, the hind parts of the animal placed in an upright position, and the antiseptic poured in. The last complication I will trouble you with is parturient laminitis. This usually occurs about two days after abortion or foaling, and what gives rise to it I will not pretend to say for I do not know. The only cases I have attended occurred after difficult delivery of a dead foal. The animals had the usual symptoms of laminitis, and were treated in the usual way with physic, aconite poultices, exercise, and light diet.

Gentlemen, in thanking you for the patient attention you have given me, I must apologise for this very simple and crude production and the cursory manner in which I have treated the various complications, each of which could have been more ably dealt with by many in this room. I must ask you to deal leniently with me by not criticising my remarks too much. It was with great reluctance that I promised to read a paper, but respect for our worthy President and a desire to help on our young Association stimulated me to make the attempt. If it produces a good discussion and adds something to our store of knowledge, I shall feel that my feeble endeavours have not been the means of wasting your valuable time.

The discussion was adjourned to the next meeting.

The resolutions from the Central Veterinary Society were next considered, and after some discussion were answered in the affirmative. Are you in favour of a higher general education ?—Yes. Are you in favour of a four years' course of study ?—Yes. The meeting then closed after the usual vote of thanks to the Chairman.

ROYAL AGRICULTURAL SOCIETY.

At the Monthly Council Meeting the following report from Professor Brown was read :—

Foot-and-mouth Disease.—This disease still lingers in the Sittingbourne district of Kent, principally among sheep. It was hoped that the slaughter of about 200 sheep by the Board of Agriculture would have stamped it out, but unfortunately some further outbreaks have occurred within the last few days.

Swine Fever.—This disease is increasing, as is always the case about this season of the year; during the past four weeks the fresh outbreaks have averaged about sixty per week, as compared with fifty per week for the previous month or two.

Pleuro-pneumonia.—Since the last meeting of the Veterinary Committee there have only been two fresh outbreaks of this disease in Great Britain. One of these occurred in Leith and the other in London. This is the smallest number of outbreaks in any four weeks since the Pleuro-pneumonia Act of 1890 came into operation, and probably the smallest in any corresponding period since the disease was first introduced about fifty years ago.

Anthrax.—There have been twenty fresh outbreaks of this disease reported in Great Britain in four weeks. They occurred in the counties of Dorset, Gloucester, Herts, Lancaster, Norfolk, Northampton, Northumberland, Somerset, Westmoreland, Wilts, Worcester, and York (W.R.) in England; and Aberdeen, Forfar, and Ross in Scotland.

MANCHESTER PATHOLOGICAL SOCIETY.

Equine Tuberculosis.

At the meeting of this Society, held on May 11th, Mr. J. B. Wolstenholme, M.R.C.V.S., showed and described specimens, and Dr. Kelynack exhibited microscopical preparations, from a case of equine tuberculosis. The horse was eighteen years old, and up to a year ago was in robust health. Acute symptoms appeared only during the last fortnight, but the animal had wasted considerably during the last six months. At the necropsy the spleen was found much enlarged, and presented several large tumour masses of firm consistency. The mesenteric glands were also largely enlarged, and in parts caseous. The lungs were in a condition of miliary tuberculosis. Microscopically, characteristic tubercular structure was well seen, and abundant tubercle bacilli found in lungs, spleen, and glands.

Bovine Suppurative Pericarditis.

Mr. Wolstenholme also exhibited the heart and pericardium of a cow with acute suppurative pericarditis, resulting from the penetration of a piece of wire, which, having been swallowed, had passed from the stomach, through the diaphragm, into the pericardium. Another fragment of wire was found projecting partially through the diaphragm.

Abnormality of Bladder.

Mr. Wolstenholme further showed the urinary bladder of a horse with two large lateral diverticulæ.

GLASGOW VETERINARY COLLEGE.

The work of the session at this Institution terminated on May 19th, and on the 20th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. On the 26th and 27th, the candidates for diploma were also subjected to a rigid examination on horses, cattle, and sheep, selected and brought to the College for that purpose. The Board of Examiners included Dr. George Fleming, C.B., &c., London; Messrs. J. Roalfe Cox, F.R.C.V.S., Pritchard, M.R.C.V.S., Duguid, F.R.C.V.S., London; G. A. Banham, F.R.C.V.S., Cambridge; J. Vaughan, F.R.C.V.S., Doncaster; J. Freeman, F.R.C.V.S., Dublin; Professor Hamilton, F.R.C.S.E., Aberdeen; Professor McKendrick, LL.D., Glasgow; Mr. Almond, Chelmsford; Veterinary-Colonel W. B. Walters, F.R.C.V.S., London; Mr. T. H. Simcocks, F.R.C.V.S., Drogheda; Mr. Thomas Campbell, F.R.C.V.S., Kirkcudbright; Mr. Finlay Dun, F.R.C.V.S., Edinburgh; Professor Heaton, F.C.S., F.I.C., London; Professor Halliburton, M.D., King's College, London; Mr. H. Olver, F.R.C.V.S., Tamworth; Mr. W. Woods, junr., F.R.C.V.S., Wigan; Mr. F. Duck, F.R.C.V.S., Aldershot; Mr. James Clark, F.R.C.V.S., Cupar Angus; and Mr. R. Rutherford, F.R.C.V.S., Edinburgh. There were also present as *ex-officio* members—Principal McCall, F.R.C.V.S.; Professor S. Cooke, F.C.S.; W. Limont, M.A., M.B.; Thos. King; and J. McIntosh McCall, M.B., C.M., M.R.C.V.S.; Mr. Geo. B. Wills, M.R.C.V.S.; and W. S. Johnson, Secretary.

Twenty gentlemen presented themselves for the first (or theoretical) part of the final examination, and of these the following fourteen were successful:—Messrs. H. A. Hazeel, Dunoon, Argyleshire; D. Hamilton, Fordingbridge, Hampshire; J. Douglas, Kirn, Argyleshire; F. T. Barton, Glasgow; A. McNairn, Newton Stewart, Wigtonshire; J. Furniss, Kippax, Yorkshire; J. Stuart, Ballymena, Co. Antrim; W. Dawson, Cootehill, Co. Cavan; W. O. Robertson, Selkirk; A. Jackson, Glasgow; D. Stewart, Inchinnan, Renfrewshire; G. Irvine, Glas-

gow; J. E. Tooth, Colaba, Bombay; and R. Aitkenhead, Pollokshaws, Renfrewshire.

The following gentlemen passed the second (or practical) part of the final examination, and succeeded in obtaining the diploma of the Royal College of Veterinary Surgeons:—Messrs. D. Hamilton, J. Furniss, W. Dawson, W. O. Robertson, A. Jackson, D. Stewart, J. Neill, S. Martin, Jas. Forrest, R. Weir, Wm. Welsh, and A. Campbell.

Twenty students presented themselves for the "B," or second professional examination, and of these the following fifteen passed, viz.:—Messrs. J. N. Mark, Newry, Co. Down; H. McCartney, Neilston, Renfrewshire; S. B. Clode, Cardiff, Glamorganshire; R. Moore, Diseworth, Leicestershire (G.C.); A. McDougall, Irvine, Ayrshire (G.C.); J. Kerrigan, Clydebank, Dumbartonshire; H. E. H. Davies, Swansea, Glamorganshire; A. Walls, Stirling; H. O. Boyle, Randalstown, Co. Antrim; J. Magee, Tullintrain, Londonderry; A. P. Stewart, Glasgow; W. L. Mackenzie, Glasgow; H. Mc. F. Anderson, Thornhill, Dumfriesshire; F. Waddington, Bishop Auckland, Durham; and A. C. Howat, Pollokshaws, Renfrewshire.

The following students passed the "A" or first professional examination:—J. Bachop, Paisley; A. Main, Liverpool (G.C.); J. Gorman, Cardiff (V.G.C.); M. White, Glasgow (G.C.); D. Brown, West Kilbride, Ayrshire; J. C. Kyle, Portglenone, Londonderry (G.C.); J. Mulqueen, Rossbreen, Limerick; A. T. Watts, Llantwit Major, Glamorganshire; J. Hill, Glasgow; J. Dick, Ballynafie, Co. Antrim; T. C. Ferguson, Glenluce, Wigtonshire (G.C.); T. A. Todd, Brighton, Sussex; A. Hart, Glasgow (G.C.), and W. T. Blane, Belturbet, Co. Cavan.

Medals granted by the Highland and Agricultural Society of Scotland:—The late Professor Allen Thomson, of London; Mr. Thomas Campbell, F.R.C.V.S., Kirkcudbright, and Principal McCall; and Certificates of Merit were awarded in the different branches of study as follows, viz.:—

Horse Pathology (Written examination).—Silver Medal—James Furniss; first-class certificates—A. McNairn, J. Douglas, and D. Hamilton; second-class certificates—W. Dawson, F. T. Barton, and J. Robins.

Cattle Pathology (Written examination).—Silver Medal—A. McNairn; first-class certificates—J. Furniss, W. Dawson, and F. T. Barton; second-class certificates—D. Hamilton, R. Aitkenhead, and W. O. Robertson.

Morbid Anatomy (Written examination).—First-class certificates—W. Dawson, A. McNairn, J. Furniss, and F. T. Barton; second-class certificates—R. Aitkenhead, D. Hamilton, and A. Jackson.

Practical Examination of Horses as to age, soundness, operations, &c. (Gold Medal by Principal McCall).—J. Furniss.

Practical Examination of Cattle and Sheep as to age, soundness, operations, &c. (Gold Medal by Mr. Campbell).—D. Hamilton.

Materia Medica, and Therapeutics.—Silver Medal—J. Furniss; first-class certificates—W. Dawson and A. McNairn; second-class certificates—F. T. Barton and G. Irvine.

Senior Anatomy.—Silver Medal—James Steel; first-class certificates—S. B. Clode, R. Moore, and J. Kerrigan; second-class certificates—A. McDougall, and A. Walls.

Physiology.—Silver Medal—Robert Moore; first-class certificates—H. Davies and A. Macdougall; second-class certificates—S. B. Clode, J. Magee, and J. Kerrigan.

Best Professional Examination in Anatomy. (Gold Medal by the late Professor Allen Thomson).—J. Kerrigan.

Junior Anatomy.—Silver Medal—T. C. Ferguson; first-class certificates—D. Brown, J. Hill, and A. Main; second-class certificates—W. T. Blane, M. White, and J. Gorman.

Chemistry.—Silver Medal—Andrew Hart; first-class certificates—J. Gorman, A. Main, and M. White; second-class certificates—T. C. Ferguson, J. C. Kyle, D. Brown, and R. Armstrong.

Botany.—Silver Medal—T. C. Ferguson; first-class certificates—J. Gorman, A. Hart, and D. Brown; second-class certificates—J. Hill, M. White, and J. C. Kyle.

Principal McCall's Bursary of £20, or a Gold Medal, the value of that amount, for the student who obtained the highest aggregate marks in the first and second professional examinations, before the Board of Examiners, was awarded to Mr. Robert Moore.

NEW VETERINARY COLLEGE, EDINBURGH.

THE annual distribution of medals and other prizes to students of the New Veterinary College, Leith Walk, Edinburgh, took place on Saturday, May 21st, within the college buildings. There was a large gathering of students and their friends from Edinburgh and the surrounding districts.

In the absence of Principal Williams, Professor W. Owen Williams presided, and presented the prizes to the successful students. In opening the proceedings, the Professor stated that the session just closed had been an extremely good one, and expressed satisfaction that the numbers were keeping up and that the prospects of the College were brighter than ever.

The following were the chief awards:—

The Principal's Prize, £20 (for 1st and 2nd best Professional examinations), O. C. Bradley.

Pathology of the Horse.—Medal, A. G. Todd; Certificates of Merit (1st Class), O. C. Bradley, E. W. Anderton, J. Farmer, G. M. Williams and E. H. Sturt; (2nd Class), J. Carpenter and H. G. Hewetson.

Pathology of the Ox, Sheep, Pig and Dog.—Medal, O. C. Bradley; Certificates of Merit (1st Class), A. P. Gribben and W. Sime; (2nd Class), J. C. Carpenter and G. B. Holder.

Demonstrator of Morbid Anatomy.—Medal, J. C. Carpenter.

For Practice.—Medals, J. C. Carpenter, H. Percival and E. E. Wood; Certificates of Merit, A. P. Gribben, F. B. Pearson, E. H. Stent, O. C. Bradley, R. T. Hutchinson and H. G. Hewetson.

Curator of Museum.—Medal, J. Farmer.

Senior Anatomy.—Medal, H. G. Bowes; Certificates of Merit, T. R. Mulcahy, F. H. Shore, G. E. Gibson and M. F. Lynch.

Physiology.—Medal, H. G. Bowes; Certificates of Merit, L. J. Farr, Jas. R. Baillie and M. Hutchinson.

Histology.—Medal, T. R. Mulcahy: Certificates of Merit, H. G. Bowes, G. E. Gibson and M. F. Lynch.

Junior Anatomy.—Medal, R. C. Moore; Certificates of Merit, J. Spreull and A. O. Hughes.

Chemistry.—Medal, W. Webster; Certificates of Merit, J. Spreull, W. Jowett and A. T. Waller.

Practical Chemistry.—Medals, A. T. Waller and W. Webster.

Botany.—Medal, J. Spreull; Certificates of Merit (1st Class), R. C. Moore and W. Webster; (2nd Class), G. R. Simpson and A. S. Milne.

Siver medal for the best essay read before the Edinburgh Veterinary Medical Society, A. P. Gribben; Certificate of Merit, O. C. Bradley.

Silver Medals for the best Special Essay, A. P. Gribben and O. C. Bradley.

Silver Medal for the best communication read before the Edinburgh Veterinary Medical Society, E. Nelson; Certificate of Merit, J. Connochie.

Army Veterinary Department.

At the levée held at St. James's Palace by H.R.H. the Duke of Connaught, on June 13th, Veterinary-Captain Flintoft, 2nd Life Guards was presented by the Gold Stick in Waiting.

Veterinary-Lieutenant E. R. C. Butler has been appointed Assistant-Professor in the Army Veterinary School at Aldershot, in succession to Veterinary-Lieutenant C. Rutherford, who returns to ordinary duty.

Mr. Hallen, M.R.C.V.S., of the Indian Army, has been appointed Inspector-General of the Civil Veterinary Department in India, and the title of General Superintendent, Horse-Breeding Department, has been abolished.

The Annual Dinner of the Army Veterinary Department, took place at the Whitehall Rooms, Hôtel Métropole, on the 17th June, when the following officers were present :—Veterinary-Colonel J. D. Lambert, C.B., in the chair; Veterinary-Lieutenant-Colonels G. A. Oliphant, W. B. Walters, F. Duck, H. Thomson; Veterinary-Majors J. Kettle, J. Reilly, J. Hammond, B. L. Glover, J. A. Woods; Veterinary-Captains J. W. Evans, I. Matthews, G. D. Whitfield, B. A. W. Powell, J. Burton, J. K. Grainger, W. B. Spooner, T. Flintoff, J. D. Edwards, F. Smith, R. H. Ringe, T. A. Killick, J. B. Savage, R. Moore, F. Raymond, J. T. Dibben, C. Rutherford, K. Lees, E. H. Kelly; Veterinary-Lieutenants A. F. Appleton, T. Marriott, E. R. C. Butler, G. C. O. Fowler, E. J. Lawson, A. G. Seath, F. D. Hunt, E. E. Martin, H. B. Knight, H. A. Sullivan. Also the following retired officers: Principal Veterinary-Surgeon Dr. G. Fleming, C.B.; Inspecting Veterinary-Surgeon, W. Appleton; First-class Veterinary-Surgeon A. A. Jones and W. Pallin.

Veterinary-Captain Morgan has been appointed Superintendent of Horse Breeding Operations in the Bombay Presidency.

Obituary.

The following deaths have been reported :—W. Johnston, M.R.C.V.S., Rosslyn, Edinburgh, who graduated in 1836; R. Maxfield, M.R.C.V.S., Congleton, Cheshire, who graduated in 1844; J. Wallin, M.R.C.V.S., Mortimer, Berks, who graduated in 1866.

The Italian Veterinary Journals announce the decease of Signor Martemucci, formerly Professor of General Pathology and Pathological Anatomy at the Naples Veterinary School, at the advanced age of 83 years.

Notes and News.

A Horse Diamond-Smuggler.—In Lord Randolph Churchill's interesting and amusing book on South Africa, is the following paragraph on diamond stealing :—"The most ingenious ruses are resorted to by the illicit dealers for conveying the stolen diamonds out of Kimberley. They are considerably assisted by the fact that the boundaries of the Transvaal, and of the Free State, approach within a few miles of Kimberley, and once across the border, they are comparatively safe. Recently, so I was informed, a notorious diamond thief was seen leaving Kimberley on horseback for the Transvaal. Convinced of his iniquitous designs, he was seized by the police on the border, and thoroughly searched. Nothing was found on him, and he was perforce allowed to proceed. No sooner was he well across the border than he, under the eyes of the detective, deliberately shot and cut open his horse, extracting from its intestines a large parcel of diamonds, which, previous to the journey, had been administered to the unfortunate animal in the form of a ball."

INCREASE OF RABIES IN PARIS.—From a report made by the Prefecture of Police in Paris, it appears that rabies has considerably increased in that city. In 1890, there were 201 cases, and 61 persons were bitten by rabid dogs; but in 1891, the number of cases was 400, while the people wounded was 143. Consequently, acting in conformity with a resolution passed by the Sanitary Council of the Department of the Seine, the Prefect of Police "invites all owners of dogs to either lead them by a string, or to muzzle them." All stray dogs are to be captured.

FIVE CALVES AT A BIRTH.—Veterinary-Surgeon Wilcot, of Thulin, Belgium, reports that a cow, eight months pregnant, brought forth five calves in March last. The first two were females, alive, and in good condition; the other three were males, and were dead at birth. All were fully and well developed, each weighing 15 kilogrammes. The first was born at seven in the morning, and the last at midnight. The cow remained in good health.

VETERINARY MEAT INSPECTORS.—The Edinburgh Public Health Committee has decided to appoint two additional food inspectors, who are to be duly qualified Veterinary Surgeons. The salary of each inspector is to begin at the painfully modest sum of £125 per annum, the ordinary pay of an artizan.

A BIG HORSE.—The largest horse in the world, standing 22 hands high, and weighing 2,800 lb., owned by T. E. Ridgeway, of Fort Worth, Texas, has just died. This horse has been on exhibition in various States, and it was contemplated sending him to the World's Fair. Now that he is dead his carcase will be stuffed and prepared for exhibition in Chicago next year.

ABSENCE OF RABIES FROM ALASKA.—The territory of Alaska, which the United States purchased from Russia, has one thing to recommend it—there never has been a case of hydrophobia known to occur within its boundaries. Probably the Indian village of Sitka has a larger population of dogs *per capita* than anywhere else, but a mad dog has never been heard of in Sitka. The natives are brought into direct contact with the dogs and handle them fearlessly, and there must be many cases of bad bites; but no evil results has ever been recorded from the wounds.

HORSE-BREEDING IN INDIA.—Veterinary-Captain Rayment, of the Army Veterinary Department, in a paper read before a recent meeting of the Bombay Asiatic Society on horse-breeding in India, said that the enormous increase in the export of wheat and cotton of late years had militated considerably against horse-breeding in many districts. Formerly where one might easily find 15 or 20 mares in a village, now none or only one or two exist, the reason being that more money is to be made out of grain, cotton, &c., than out of horse-rearing. The zemindar, alive to his own interests, sells his mares and puts his money into bullocks, well-digging, &c., to raise what will pay him best. If he could be induced to use his mares in the plough, in drawing water for the irrigation and the like, instead of his non-productive bullocks, an immense step would be taken in the right direction. For various reasons, the chief of which is his intense conservatism, nothing will persuade him to do this. The zemindar keeps his mare simply to breed from, and with the exception of leading her in a wedding procession, or, occasionally riding her at a walk from one village to another, never uses her. So the sale of her produce has to cover the expenses of her keep and leave a margin of profit. As long as grass costs nothing and grain but little, this was all very well, but now there is sufficient fodder to be got off the land for the plough-bullocks, and grass must be bought. Grain, too, has gone up in price. Thus, as the mare does nothing for her own keep, she becomes an expensive luxury instead of a remunerative animal, and is disposed of, and the zemindar, finding he has lost money, is very chary of breeding horses again. Hence horse-breeding is on the decline in India, owing mainly to economic causes.

DOCKING HORSES' TAILS.—The Hon. G. N. Curzon, in his work on Persia, just published, when speaking of the Persian horses, says: "The Persians, if peculiarly disgusted with a post-horse, sometimes revenge themselves by docking his tail, which incapacitates him from further use in a country where a tail is considered *de rigueur;* but this is a spiteful, if not a cruel act, from which strangers can afford to abstain."

Correspondence.

INSECTS AND CONTAGIOUS DISEASES.

DEAR SIR,—Bites from insects, particularly mosquitoes and flies, must surely be reckoned amongst the causes of the transmission of contagious diseases. It is no less disgusting than true, that flies may be traced from alighting upon fæculent matter (sometimes fæces from a patient suffering, say, from typhoid fever) to their second visit, which frequently is to the pantry, carrying with them, upon the legs and body sometimes, material capable of producing disease. In the event of these insects biting animals, the probability of producing the disease would, of course, depend upon the number of bites and the amount of matter contained in the fang of the insect. The mucus from glandered horses, which is often coughed all about the stable, must frequently adhere to the legs and fangs of flies, and these insects then carry the matter on to the raw surfaces of healthy equine neighbours, suffering, maybe, from sore backs.

Pigs with "swine fever," their fæces must certainly be charged with the germs of the disease, and in this way—by insects—the ailment may be transmitted.

FLY PAPERS.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Prof. J. McCall, Glasgow; Veterinary-Captain J. A. Nunn, Lahore; J. W. T. Moore, Newcastle-on-Tyne; R. Dawson, Reigate; "Fly-papers;" Professor Williams, Edinburgh; A. W. Hill, London; H. Dawes, West Bromwich; R. Rutherford, Edinburgh; W. Awde, Barnard Castle; H. J. Rogers, London; Prof. A. Smith, Toronto; Veterinary-Colonel I. D. Lambert, London; J. Malcolm, Birmingham.

BOOKS AND PAMPHLETS: *Strangeways and Vaughan,* Veterinary Anatomy; *Dr. D. E. Salmon.* Results of Experiments with Inoculation for the Prevention of Hog Cholera; *Drs. Boschetti and Bassi,* Fleming's Trattato di Obstetrica Veterinaria; *J. Cruzel,* Traité Pratique des Maladies de l'Espèce Bovine; *F. Mauri,* La Castration des Chevaux Cryptorchides; Bulletin des Séances de la Société Nationale d'Agriculture de France; Encyklopädie der Gesammten Thierheilkunde und Thierzucht.

JOURNALS, ETC.: *United Service Magazine; Biological World; Indian Agriculturist; Land and Water; Clinica Veterinaria; Bacteriological World; Annales de Méd. Vétérinaire; Edinburgh Medical Journal; Recueil de Méd. Vétérinaire; Lancet; Echo Veterinaire; Repertorium der Thierheilkunde; Thierarzt; Revue Vétérinaire; Medeno Zooiatro; Journal of Comparative Medicine and Veterinary Archives; Mark Lane Express; Deutsche Zeitschrift für Thiermedicin und Vergleichen de Pathologie; Journal de Médecine Veterinaire et de Zootechnie; Live Stock Journal; American Veterinary Review; Field; County Gentleman; British Medical Journal.*

NEWSPAPERS: *Scottish Leader; Newcastle Daily Chronicle; Liverpool Mercury; Times of India; Oxford Journal; Liverpool Courier; Baltimore American.*